PLANS FOR BUSY WORK

EDITED BY
SARAH
LOUISE
ARNOLD

SILVER, BURDETT
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PLANS FOR BUSY WORK

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PREPARED BY THE

BOSTON PRIMARY TEACHERS' ASSOCIATION

EDITED BY

SARAH LOUISE ARNOLD

SUPERVISOR OF SCHOOLS, BOSTON

"O'er wayward childhood would'st thou hold firm rule
And sun thee in the light of happy faces?
Love, Hope, and Patience, these must be thy graces,
And in thine own heart must they first keep school"

SILVER, BURDETT & COMPANY

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PUBLISHERS' NOTE

THIS volume is made up of contributions secured by the members of the Boston Primary Teachers' Association. These teachers recognized the demand for such material in primary school rooms, and appealed to the members of the Association to report their successful plans in providing Busy Work for their own classes. A committee was organized to collect and collate material.

All contributions passed through the hands of the committee, and were afterwards edited by Miss Arnold, who is heartily in sympathy with the work of the Association. They represent the experience and judgment of the most thoughtful primary teachers of Boston.

The book is published for the Primary Teachers' Association, and any profits accruing to the Association from its sale will be used for their work among the Boston teachers.

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INTRODUCTION

THE primary teacher must solve a double problem. She must not only teach the children how to "read, write, and cipher" under her guidance, but she must also teach them how to study independently, so that they may be prepared to use books for themselves. While the teacher of higher grades may content herself with explaining and assigning the lessons, leaving the pupil to perform his tasks unaided, the primary teacher must direct the period of study as well as the recitation and the teaching exercises. In an ordinary school of from forty to sixty pupils, not more than fifteen or twenty should be reciting at once; the others must busy themselves at the desk, table, or blackboard. Our problem is to devise suitable and profitable occupation for these pupils.

Most of us can remember the earlier days of school life, when the little children swung their weary feet from the high benches, yawned, gazed wistfully out of the window, and longed for four o'clock. Their only occupation was making pictures on the slate. This, in time, gave place to a weary repetition of the letters of the alphabet, and at last to "sums." But, oh, the wasted hours and the dull indifference which they caused!

We are beginning to learn that the work of teaching does not consist merely in hearing recitations and securing answers to questions. The modern teacher endeavors to fill every hour of the child's school life with happy, helpful, and active work. "Doing" is usurping the place which, in times past, was accorded to listening. The teacher of little children, not content with hearing recitations and assigning tasks, provides occupation for these hitherto listless hours. This is done not merely with the hope of making the children still or keeping them busy. We have learned that their growth is dependent upon right activity and that our function is to provide occasions for such activity. We have come dimly to apprehend the truth that it is the child's deed which makes him master of the idea which we are endeavoring to impress. Expression is the vital element. His action, and not ours alone, is the essential factor in his growth.

The busy work program, then, thoughtfully considered, is no mere list of devices for maintaining a quiet schoolroom; it represents a thoughtful provision for the actual needs of the children. Rightly planned, it provides fitting tasks by means of which the child tests his knowledge and skill, applies the new truth which he has learned, and weaves the new idea into his expression.

The problem is not so simple as it appears to the casual observer, who, in visiting the school, sees the children happily employed with what seem like playthings. So simple and so natural does the busy-ness seem that one might imagine it had happened without any plan or intervention on the part of the teacher. But the experienced teacher realizes that serious care

has been given to this wise and natural employment of the little hands and the eager minds, and that it is this very "busy work" which brings to fruition the lessons given in the class.

Every exercise in seat work should secure one of three results. It should make clearer the lesson which has been presented in the class, or teach a new lesson, or afford opportunity for practice in some line where skill is required. For example, the teacher presents the square in her lesson in drawing. The child folds, or cuts, or draws the square at his desk, and thus perceives it more clearly than when it was first presented. Or he makes an original design, with the square as a unit. Or, through practice with scissors or pencil, he becomes able to fold or to cut the perfect square.

These three ends may fairly be considered the tests of busy work. If the exercise results in new knowledge, in clearer perception of an old truth, or in added power to see or to do, it is good. If it simply fills the time of the child, requiring neither thought nor effort, it is dull and profitless, and might as well be omitted. To pretend to do something which is not worth doing at all, is demoralizing. No adult would submit to the process; the children are equally conscious of their failure under these circumstances.

Busy work, to be truly helpful, must engage the children's attention, and to this end must be interesting. Everybody knows that variety is an element of interest, and that frequent changes of playthings help to hold the young child's attention, at the same time making a return to the old material a delight. Furthermore, the material must be attractive to the child. The fact that the teacher considers it good for the purpose

is not enough. The pupil, too, must enjoy his work if his interest and attention are to be held to his task. We do not always realize that a child's attention and interest also depend largely upon his own conception of the purpose of the work. When he sees that his labors accomplish something which he desires to accomplish, he works with persistent zeal. The busy work, to be successful, must be purposeful and must secure something which the child considers a satisfactory result. Making something which he likes to make, doing something which he likes to do, is profitable to him, and profitable busy work always contains this element.

While the child sees the immediate accomplishment, and is pleased with the square which he has drawn, or the triangle which he has cut, or the row of beads which he has strung, or the mat which he has woven, the teacher beholds the fuller fruition. She knows that the patient endeavor which entered into the drawing, or the cutting or the stringing, results in greater power in doing and the ability to persevere longer than had been possible before. While making the square the child learns to see more clearly, and to express more plainly that which he sees. Clearness of vision and power to execute grow from such simple exercises. This the teacher knows, although the child realizes nothing of his growth.

The following pages have been prepared by the members of the Boston Primary Teachers' Association. Every contribution represents the practical experience of some teacher who has secured good results from the use of the method or device which she recommends. It is not expected that any teacher will attempt to follow all the plans which are described. Each must

adopt for herself the methods which are in harmony with her own work. But out of the practical experience of many teachers should come real service to those who have their experience yet to gain. The study of the exercises which are here submitted cannot fail to help the teacher who is still struggling with the problem of busy work.

SARAH LOUISE ARNOLD.

BOSTON, April, 1901.

INTRODUCTORY

PLANS FOR BUSY WORK

I.

THE KINDERGARTEN OCCUPATIONS

By LAURA FISHER,
Director of Kindergartens, Boston.

THE introduction of kindergarten occupations into the primary school is an unfailing sign of the union between these two closely allied grades of a school system. The degree to which this work can be extended, and the forms it shall assume, must depend largely upon the development of the children and the skill of the teacher.

It will not do to say, because these occupations are beneficial and developing, that therefore children of all ages should use them; nor will it be safe to ignore the work already done and the skill attained before the child enters school. Repetition, on the one hand, and undue simplicity on the other, may cause the best kind of work available to fail of the result desired. We need to remind ourselves that the kindergarten occupations are designed mainly for children between the ages of four and six or seven years; and that they cannot with safety be given as educational employment to children beyond this age in the same form in which they are

prescribed in the kindergarten. Their purpose is manifold. They should of course minister to the child's need of constructive activity and creativeness; they should develop his artistic sense and cultivate taste; they should fix impressions received through the gifts by providing for the reproduction of these impressions and for the constructive expression of the same ideas; they should develop observation and self-criticism and lead to individual and independent self-directed activity.

Under the direction of the kindergartner, these results can be and are achieved. The danger in the primary school will result from the fact that, when the work of the children cannot be superintended by the teacher, for lack of time, it tends to become purely mechanical.

In spite of these possible difficulties, we all believe that the introduction of kindergarten occupations into the school is a distinct advance, and we have faith that the enthusiasm and skill characteristic of the modern teacher will surmount all obstacles and achieve success.

In considering the occupations, it is necessary to recognize the differences inherent in them. The materials used are more or less flexible: some are more suggestive than others; some require more technical skill and greater thought.

The most flexible materials, used in drawing, coloring, clay modeling, make possible more finished and artistic work, and offer to the child the greatest opportunity for free though naturally crude expression.

The sewing, folding, weaving, peas-work and cardboard modeling are less suggestive, more restricted, more rigid, and more limited in their scope than the above-mentioned occupations. They, in general, require

greater inventive power and more definite ideas on the part of the child for the production of original work of real significance. On the whole, they are not as artistic, although the beginnings of design are well developed by means of some of them.

Crudities permissible in the kindergarten should be avoided in the primary school, and many forms legitimately used with younger children should be dropped when they enter school.

The occupations used to best advantage in the primary school (provided the child has had *thorough* kindergarten training) are, in my opinion, clay modeling, drawing and coloring, peas-work, cardboard modeling, paper-folding, with some paper-cutting and pasting, and nature-work. These exercises, carefully planned, should build upon what has already been accomplished in the kindergarten and should be carefully graded according to suggestions offered by Froebel.

They should assume three general forms: the Mathematical, the Æsthetic, and the Useful. As the child grows in knowledge and conscious power, the Æsthetic and Mathematical should take precedence of the forms of use; and the production of objects should find its place in the manual training or sloyd.

Careful observation of form and number, hidden in all the objects produced, should constitute an important factor of the work done, in order that the child may be made familiar, through construction, with simple mathematical facts and relations. The artistic in form, color, and arrangement should be first enjoyed and later consciously recognized.

The objects made should be studied in their relations to nature and to human life and activities. This con-

struction can easily be correlated with the language exercises, nature-study, and literature.

The series of exercises should be so planned as to give scope for free work, prescribed work, and logical sequence. Each of these has a place in the development of the child and the occupation, and undue emphasis, of either, produces a lack of balance and growth. The children should be encouraged to work along the suggested lines with home material, that they may carry into the home the power and interest awakened in the school, and may also learn to express themselves upon and through the materials found all about them, although these may be crude and not beautiful. The real results desired and aimed at must always be inner power and thought; and these, achieved, will lead the children to look upon the world and its things as their *opportunity*, even though the materials provided and the conditions of their environment may be imperfect.

It would seem to me quite possible, provided the teacher can superintend the work, to introduce some advanced mathematical gift exercises into the primary school, although if the children spend a sufficient length of time in the kindergarten, these are unnecessary.

The real bond between the kindergarten and the school is the spirit they have in common. This spirit will evolve the specific forms through which it expresses itself; and the deeper study of the child's nature and needs will bring forth the ways and means by which these are developed and met.

As we learn from one another and give to one another, we grow nearer together and nearer to the child. It has been a source of great joy and help to find that

primary teachers and kindergartners are coming ever closer together; and no recognition the kindergarten receives can be more gratifying and inspiring than the hospitality accorded it by primary teachers, who, in work such as this, reinforce its influence and strengthen its hold.

Of them may it be truly said that they have realized Froebel's deepest desire, for they too show us how to "live with the children."

II.

THE DISTRIBUTION AND CARE OF MATERIALS FOR BUSY WORK

INFORMAL LETTERS FROM TEACHERS

I.

In considering the subject of seat work, one of the first questions with me has been "How can I distribute the material with the least waste of time?"

I confess that the problem is not an easy one. To facilitate matters I keep as much material as possible in individual boxes. Letters, tablets, sticks, and pegs are so arranged. It insures a more equitable division and a more orderly distribution.

When it is at all practicable I allow each child to keep his own box in his desk. Pegs are always kept in this way. The first of the year the boxes are filled with common shoemaker's pegs, which the children at once proceed to scatter more or less lavishly upon the floor. Then I exhibit to their admiring gaze a box of colored pegs, with the assurance that those children who do not drop any pegs for a week shall have theirs exchanged for these beautiful things. The excitement is intense, and when, at the appointed time, a dozen or more children have earned the new ones, I know the battle is won, for no self-respecting child will tamely allow his neighbor to revel in the luxury of colored pegs while he ignobly counts the mean little white ones.

Then if a child does not take proper care of the new ones, they are taken away and he is given the white ones again until he has learned to be careful. I rarely have to do this, however.

In many schools the children bring boxes for pegs or letters, but as mine are not able to provide them, I get small pasteboard boxes about an inch deep and two and a half inches square for the pegs, and others twice as large for the letters. The small boxes cost from ten to fifteen cents a dozen, and the larger ones from fifteen to twenty cents. In the box with the pegs may also be kept the wooden square which the children use in outlining the dominoes for number work.

The other material in boxes is in charge of groups of three or four children who are taught how to care for and distribute it. These groups are changed from time to time, to allow others to be useful as well as distinguished. If the material is to be used early in the session, it is distributed before school and collected at recess. If after recess, it is distributed at recess and collected after school.

The material which is more easily cared for, like paper, pictures for tracing, scissors, etc., is passed by one child from each row, who is very attentive, or has made some special effort in the right direction during the session. Thus all the children are eligible to the honor.

Of course there is occasionally something that I have to distribute myself, but I try to do as little of that work as possible, since the responsibility is good for the children.

C. A. S.

II.

Teach the child at the head of each line to act as "monitor," "helper," or "distributer," or choose the child who has tried to do his best during the preceding lesson.

Children soon learn where materials are kept if the places are easily accessible to them, and a bit of judicious praise to the child who returns a thing to its proper place will soon bring the class as a whole to a condition of care-taking.

Begin the first of September with the pegs. Let some careful child go to the closet and find the box containing them, then direct him how to give them to the class. Use a small cup or box as a measure. The child at the end of the line should always be supplied first. With the whole class attending, I praise or criticise the way in which the monitor does his work. By pursuing this method for a few days, several children may be efficiently trained, and gradually nearly all the members of the class.

Such a drill as this given with three or four different materials should be sufficient, though a few explicit directions may be needed when any new material is given out, later in the year. I never begin to work myself till I see that every child has begun his work.

The first of the year I have the pencils given out when needed. After that time each child who brings a neat pasteboard box receives a pencil to keep. The pencils are sharpened regularly twice a week; it takes only five minutes to go through the class. If any child breaks a point between whiles, I mend it for him, if he asks before or after school.

It seems well for each child to have some form of busy work in his desk for spare moments. For this I find a box of pegs, or letters, or books, the best. The books are changed once a month, so they are always entertaining. M. S. C.

III.

If the teacher of the first grade will devote a few days before the opening of school in September to the preparation of busy work for the coming year, she will find it a good investment of time, and congratulate herself for this forehandedness many times over.

There is quite a difference of opinion among teachers as to which portion of the material used for busy work may with profit be kept in the desks, and which had best be cared for by the teacher.

The material kept in desks needs, of course, oversight by the teacher. All agree that a great deal of the material cannot be kept in the desks from day to day. Some of that most commonly used can, with advantage, be so kept. A set of shelves, protected by a door or curtain, is a great convenience. On these the material may be kept, stored in boxes. It is easily accessible, and comparatively free from dust. A table will answer the purpose, if the shelves cannot be obtained.

Whenever possible, a child should have his own individual pencil, crayons, scissors, foot-rule, paint-box, and pegs. One large box will hold all, with the exception of pegs, which may be kept in a bag about five inches square, hung upon the iron crossbar of the desk. The loop of the string should be long, to allow of the bag being pulled through the loop, thus obviating the use of tacks.

Spool boxes are almost invaluable for keeping material in good condition, and are easily distributed.

Letters, words, and pictures for matching or other uses may be kept in the same way, or in envelopes which are placed in a compartment box.

Beads, counters, button-moulds, strings, etc., should be kept in boxes.

White and colored paper, cut into proper sizes and shape for various exercises, should always be found on the shelf or table. M. E. W.

IV.

I like to give out two kinds of busy work at once, one kind for plain fare and one kind for dessert; the first kind, like copying, making number pictures, making words or sentences with letters, or equations with figures, to be finished before the other kind is taken. Then the children who have worked quietly and busily, and have done their best, use the other busy work. For this I use stencils, the colored paper forms for sorting and making geometrical designs, pegs in the rainbow colors for designs, pictures with the words to match them, tracing paper with pictures, paper-cutting, and so forth.

I make the busy work for one day a help to the work of that day, or a review and drill on work that has been done, or a preparation for something which is to be taught.

The children usually distribute and collect the material. The directions are often given before the material is distributed, and then one child can do the work while I am teaching another group. B. E. D.

III.

SENSE TRAINING

ALL teachers of lowest primary grades will find in their classes many children who are not mature enough to do the work which is provided for first-grade pupils. They have not yet learned to observe carefully, and therefore cannot imitate well; their muscles are not trained to hold the pencil or the scissors; they have very little ability to construct; they cannot imagine the conditions which are expressed in the sentence or in the problem in number.

For such pupils it is absolutely necessary to provide exercises which will afford practice in observation, imitation, and construction. Exercises of this sort have been prepared, and are here grouped under the title "Sense Training." They will be found helpful for immature pupils in both first and second grades, and valuable for all first-grade children in the first half-year of their school-work. Many of the exercises can be made helpful if related to the ordinary class instruction, even through the second grade.

The young teacher may need the suggestion that the work with figures and words, which is so often attempted by little children, often hinders their progress, by presenting forms which represent no idea to them. They work with figures, but *do not think numbers;* they work with words, but *do not associate the form with the idea.* Therefore their reading is mechanical, and their "number sense" develops very slowly. The foundation for rapid and accurate work in the future lies in the development of observation, imagination, and skill in

doing. It is a mistake to count such occupation as mere "busy work." It is worth while to give the time allotted to the recitation to instruction in these exercises, that the children may become independent and helpful in their future practice. In these exercises teaching should precede doing, and the children should be left to independent practice only when they have learned how to follow the teacher's directions. — ED.

EXERCISES IN OBSERVATION, IMITATION, AND CONSTRUCTION

I.

Material: colored pegs, sticks, split peas, or lentils.

Note: Practice in arranging pegs may first be given in simple line work. Direction: Make a line as long as your longest finger; make another a little way from that, and of the same length; fill your desk-top with lines of just the same length. Or, make a line as long as your little finger; make another twice as long; another three times as long, etc. Or, make a small square, make one twice as large. Or, make a small oblong, make one twice as long, but the same width, etc.

1. Assort the pegs according to color. **Grade I.**

2. Make a simple border, following a pattern which is drawn upon the board, and using pegs of a given color. **Grade I.**

3. Copy a simple border, using any color or colors at will. **Grade I.**

4. Make original border or other design, choosing colors at will. **Grade I.**

5. Reproduce with pegs one or more of the figures upon the chart. (See pages 118–125.) **Grade I.**

6. Outline with pegs a geometric figure which has previously been drawn upon a large sheet of cardboard. **Grade I.**

7. Outline letters, as in 6. **Grade I.**

8. Lay vertical, horizontal, or slanting lines, no restrictions as to length being given. **Grade I.**

9. Lay the same lines at given lengths, first by measure, then by the eye alone. **Grades I. and II.**

10. Lay a square of a given color. **Grade I.**

11. Lay a square, using pegs of one color, and make the diameters out of pegs of a different color. **Grade I.**

12. Lay a square, using pegs of a given color, and make the diagonals of a contrasting color. **Grade I.**

13. Lay oblongs, circles, and triangles in the same manner. **Grades I. and II.**

14. Lay right angles, using pegs of a given or chosen color. **Grade I.**

15. Make borders, using right angles only. **Grades I. and II.**

16. Lay acute or obtuse angles.

17. Make borders in which acute angles are repeated. **Grades I., II., and III.**

18. Lay squares, rectangles, and triangles of given dimensions as directed by teacher. **Grades I., II., and III.**

19. Copy simple pictures in outline, as houses, trees, etc. **Grade I.**

20. Repeat a given number of lines, vertical, horizontal, and parallel. Copy outlines of objects, such as clock, chair, house, etc. The exercises may be increased in difficulty by requiring a definite number of pegs to a line. **Grade I.**

21. Lay designs with pegs, then copy on paper. As an incentive, the most faithful children may color them with crayons **Grade I.**

22. Lay a square with pegs and inscribe a circle or a triangle. **Grade I.**

23. Lay a circle, and inscribe a square or triangle. **Grade I.**

24. Lay with pegs some form connected with the work of the day, no pattern being given. **Grade I.**

II.

Material: Paper or cardboard, cut in geometrical forms of different shapes, sizes, colors.

Note: Boxes of prepared tablets may be obtained for this purpose, but a collection prepared by the teacher herself, or made with the assistance of the older children, will be even more helpful for the general purpose of assorting and arranging. The tablets which are cut by machine will be more helpful in making designs, as they will be more exact than those made by the pupils.

1. Assort forms according to color. **Grade I.**

2. Assort according to size. **Grade I.**

3. Assort according to shape. Place together those which are like in form without regard to size. **Grade I.**

4. Place in rows figures having same number of sides. **Grade I.**

5. Assort the forms according to angles, placing together those forms which have right angles, and so on. **Grades I. and II.**

6. Copy a given form exactly and then repeat, increasing the size but retaining the proportion. **Grades I. and II.**

7. Draw picture of some object which is like a given form. **Grades I. and II.**

8. Instead of the cardboard forms, use seeds having different shapes and sizes. These may be assorted as in the above exercises. **Grade I.**

III.

FOLDING

Material: Paper in geometric forms which may be folded, pressed, or cut, in straight lines.

1. Fold and cut paper in straight lines. **Grade I.**
2. Fold and cut squares and oblongs on their diameters or diagonals. **Grade I.**
3. Fold and cut circles on their diameters. **Grade I.**
4. Fold and cut paper squares into pin wheels. **Grade I.**
5. Get the square from the oblong paper by folding down the superfluous piece. **Grade I.**
6. The different angles may be folded from the square, from the oblong and circle. **Grades I. and II.**
7. Fold, from memory, any forms which have been previously dictated. **Grades I., II., and III.**
8. Fold and cut strips of paper into halves and fourths. **Grades I. and II.**
9. Fold and cut forms into thirds, fourths, etc. **Grades II. and III.**
10. Fold circles into halves and fourths. **Grade I.**
11. Draw forms to represent a folded piece of paper. **Grades I. and II.**
12. Fold and cut hats and dresses for paper dolls.
13. Fold and cut furniture for doll-houses, — chairs, tables, bureaus, boxes, etc. **Grades I., II., and III.**

IV.

CUTTING

Material: Paper and pencils, scissors and cardboard patterns.

1. Mark around pattern and then cut out the figure. (Use geometric forms or representations of leaf, flower, or familiar object.) **Grade I.**

2. Cut pictures from papers. **Grade I.**

3. Cut designs which have been folded. **Grades I. and II.**

4. Cut squares, triangles, etc., of a given size, free-hand. **Grades I., II., and III.**

5. Cut straight lines which have been ruled, thus learning to cut to a line. **Grade I.**

6. Fold and cut sheets of paper which are to be used in the class for different purposes. **Grade I.**

7. Cut and dress paper dolls at pleasure. **Grade I.**

8. Cut, from paper or cardboard, representations of household furniture, boxes, bureaus, bookcases, desks, chairs, sofas, beds, etc. **Grades I., II., and III.**

9. Cut, from seed and vegetable catalogues, pictures of the fruits and flowers. Paste them upon cards and write the name under each. **Grades I. and II.**

10. Cut, free-hand, from paper, forms of animal and vegetable life. **Grades I., II., and III.**

11. Cut, free-hand, representations of familiar stories. **Grades I., II., and III.**

12. Colored paper may be folded and cut into strips for chains for decorating the room or the Christmas tree. **Grades I., II., and III.**

Note: This is a very valuable exercise because all the children may unite in the work.

V.

STRINGING BEADS, SEEDS, AND BERRIES

Material: Wooden beads in different geometric forms, or glass beads, straws or even wooden button-moulds stained in different colors.

1. String the beads, arranging the colors and forms at pleasure. **Grade I.**

2. String in twos, threes, or fours, using given colors. **Grade I.**

3. String two and one, or three and one, etc., using given colors. **Grade I.**

4. String seeds and berries to form a fringe or decoration for the school-room door or window. **Grade I.**

VI.

CLAY MODELING

Material: Clay.

1. Model fruit which has been studied in the class exercise. **Grades I., II., and III.**

2. Model geometric solids after observing them in the class exercise. **Grades I., II., and III.**

3. A tile may be moulded and decorated by impression. **Grade I.**

4. The impress of leaves may be taken by laying a flat mat of clay on a square or circle of paper, laying the leaf upon the clay and pressing down firmly. With a pin, the leaf may then be outlined upon the clay. **Grade I.**

5. Sand pans, or clay, may be used to mould hills, valleys, farms, etc., something to represent houses, trees, and animals being provided. **Grades I., II., and III.**

6. Model cocoons, or any other natural objects studied in the school-room. **Grades I., II., and III.**

Note: Numbers 3 and 4 are not approved for higher grades. Clay should be placed in a mass on tile and picked up into the desired form.

VII.

EXERCISES TO DEVELOP POWER TO RECOGNIZE, NAME, AND ARRANGE COLORS

Material: Colored paper, worsteds, paints, etc.

1. Give each child a box, envelope, or handful of papers, or cardboard squares, circles or oblongs, of different colors. Let him sort according to color.

These forms may be bought at school-supply rooms, or the teacher may cut them from paper or cardboard at very small expense. **Grade I.**

2. Mark colored paper in narrow strips. Provide each child with scissors, and let him cut on the pencilled line.

If the children are unskillful with the scissors, let them practice cutting the blue lines that are found on white writing paper. **Grade I.**

The colored slips may be used for weaving, or the ends may be pasted together to form a chain, like a dandelion chain.

3. Fill envelopes with colored paper cut in any desired form.

Each envelope should contain six or seven tints and shades of each of the standard colors.

Each child, on receiving an envelope, should be directed to select all the tints and shades of one color and arrange them in scale from light to dark. Or, he

may place all the reds in one pile, all the blues in another, and so on. Grades I., II., and III.

4. Give every pupil an envelope containing paper oblongs in the spectrum colors. Direct him to arrange in the order of the spectrum.

5. Give every pupil an envelope containing squares, circles, triangles, and other forms. Arrange in designs. (Tints and shades may be added later.)

Grades I., II., and III.

6. Direct children to trace circles on colored paper.

Provide scissors and have these circles cut out and preserved for future use in laying designs or in pasting.

Other forms may be used. If the children are allowed to keep this collection in their desks, it is likely to provide an unending source of entertainment for otherwise idle moments. Grades I. and II.

7. Provide each child with a pasteboard circle four or five inches in diameter, also a sheet of colored paper.

Direct him to place the cardboard on the sheet of paper and trace around it, then cut it on the pencilled line.

A number of circles may be cut and folded into halves, fourths, or eighths. If well cut, the parts may be arranged in designs and pasted.

Two sizes of circles may be used, thus increasing the possibility of pleasing designs. Grades I., II., and III.

8. Shapes of leaves, flowers, plants, and vegetables may be cut from colored cardboard.

These may be sorted according to color and shape.

Later in the year, the children may trace around these forms.

This material may be gathered from magazines and papers, and especially seedsmen's catalogues. Grade I.

9. Direct the children to sort in separate piles the colored tablets which have been provided, putting all the circles of one color in one pile; below put all the squares of same color, then the oblongs. **Grade I.**

10. Let the children arrange the colors in the spectrum order. **Grades I., II., and III.**

11. Let them make a color scale from the darkest to the lightest, or *vice versa*. **Grades I., II., and III.**

12. Direct them to select a given form of a given color. **Grade I.**

13. Form borders of given colors. **Grades I., II., and III.**

14. Make designs in given colors. **Grades I., II., and III.**

15. Make designs in any chosen colors. (The teacher should be careful to commend those designs which are harmonious in coloring and arrangement.) **Grades I., II., and III.**

16. Arrange, on slips of cardboard, seven colors and their names. Place one slip in an envelope with six duplicates of each color and name.

Give such an envelope to each child, directing him to match colors and attach the fitting name to each.

Later in the term, letters may be added to the contents of the envelope and the words formed from these. **Grade I.**

17. Use worsteds of the prismatic colors cut into pieces one inch and two inches long.

Give a handful of pieces to each child and direct him to arrange them in different piles, according to color. **Grade I.**

Later in the year, tints and shades may be added, making the sorting more difficult.

(The worsteds may also be sorted according to lengths. Bits of silk and ribbon may be used instead of worsteds.) **Grades I. and II.**

18. Allow the children to paint representations of natural objects. Paint-boxes may be kept in the desk.

The pencil should not be used to outline in the painting exercises.

VIII.

WEAVING

Weaving is one of the most profitable occupations for primary classes. It may be begun in the first grade, and may be used with advantage through all primary classes.

In teaching the process, use mats of some durable material, as leather, enamel cloth, or curtain holland. These mats may be 4×6 inches, and should be cut with a penknife and ruler into strips one half an inch wide, leaving an uncut margin of equal width on the four sides of the mat. Instead of the mats, slate-frames may be used, with broad tapes tacked from end to end for the woof or foundation.

Use inch or half-inch splints in the first lessons. The simplest pattern is one under, one over, one under, one over, and so on. The second splint would, of course, reverse the order.

More difficult patterns may be introduced after facility has been acquired. As soon as the children understand the use of the mats and the splints, they may construct little looms for themselves and weave mats of raffia and cord.

Raffia is a fibrous material which florists use in tying plants. It may be bought of the florist for a comparatively small sum; twenty-five cents would supply an ordinary class for a month or six weeks.

A convenient loom may be made from an old slate-frame. The lengthwise strands, or the woof, may be made of cord fastened upon tacks in the frame of the slate. The warp, or filling, may be of raffia, or long strips of cloth, or even of splints. In using the cord and raffia, or cloth, the children will tend to make the mat narrow in the middle. This may be prevented by using long knitting-needles or strips of stout wire for the two outside strands, and withdrawing them after the mat is completed.

The advantage of this sort of weaving is that the product is a comparatively durable article which may be put to some use for the child. The mat may decorate the doll-house, or may be placed under the ink-stand on the desk, or beneath a vase of flowers or a growing plant. If stout enough, it may be used as a holder.

In connection with these lessons, the children should observe the garments which have been woven for them. The story of the old-time weaving should be told to them, and lessons upon textile materials — wool, flax, cotton, and silk — should be added.

The old-fashioned spool knitting-work which every teacher knows, is also recommended. The knitting may be done with cotton yarn, worsted, woollen yarn, or with cord, and the product sewed into mats, holders, etc.

Simple basket-making may be added in schools where material can be easily secured, and where a basket-maker is ready to give the teacher a few practical lessons.

IX.

MISCELLANEOUS

Little children should not be required to work at their desks more than a half-hour at a time, without exercise.

The children of Grade I. may be sent into the corridors, or better still, out of doors, for two or three minutes' vigorous play with bean-bags or balls. Some older children from other classes may accompany them.

Children of any grade may be sent out to collect seeds or leaves of a certain tree or plant, as a reward for faithful work.

Work at the table or blackboard should alternate with work at the seat, whenever feasible. Many of the exercises taken in the seats may just as easily be performed at the blackboard.

LANGUAGE, SPELLING, AND READING

IV.

LANGUAGE, SPELLING, AND READING

Exercise 1. — Matching words which accompany and name a picture. To be used chiefly in Grade I. Suitable for first three months of school.

Material: Pictures or sketches; printed words; envelopes.

Procure from the printer slips of printed words, having many duplicates of each word. One hundred duplicates of each word is a sufficient number to work with in a school of forty children.

These slips can be printed for about fifty cents a thousand, if a large number is ordered. If the slips are cut into separate words by the printer, the cost will be slightly increased.

Cut pictures from old books, illustrating the words which are taught in the reading lessons during the first two months. Or, if you are able to sketch, draw the desired pictures in hectograph ink, and hectograph the sketches. These pictures should be separated into sets of five or six, each set containing a group of words having some relation to one another; for example, papa, mamma, Alice, Willie, baby, in one set. Flower, leaf, bud, tree, garden, in another set.

If sixty different words are printed, and corresponding pictures obtained, the teacher has materials for ten different sets of envelopes. In envelope one are put

five or six pictures and five or six words corresponding to each picture, one of the words being firmly glued to the picture. There will then be about twenty-five loose words in the envelopes.

The child proceeds to match the loose words to those attached to the picture. It is of the greatest importance that time should be taken to hear him repeat the words at the close of the busy work period. When he is able to match the words in the first set, quickly and correctly, a second set is given to him; if there are ten sets, he teaches himself sixty words in this way.

It is better that this matching of whole words should precede the matching of letters or the forming of words from letters. Recognition of entire words should precede the analysis of words into letters.

The words may be written in script if preferred. By using script for board work and print for seat work, script and print are carried along easily together.

MODEL

garden	flower	leaf	bud	tree
(Picture)	(Picture)	(Picture)	(Picture)	(Picture)

garden	flower	leaf	bud	tree
garden	flower	leaf	bud	tree
garden	flower	leaf	bud	tree
garden	flower	leaf	bud	tree
garden	flower	leaf	bud	tree

Exercise 2. — Matching words which have been learned in the reading lesson. **Grades I. and II.**

Material: Words copied on the hectograph, and envelopes or boxes.

Using hectograph ink, divide a sheet of paper into squares, and write in each square a word which has been learned by the class. Make duplicate copies by using the hectograph.

A box and a sheet of words are given to each child. By following the lines of the squares, the children are able to cut their own words, and place them in the boxes which are kept in the desks.

New words may be added from time to time as they are learned in the board lessons. These words afford a variety of exercises. The child may place the words which he knows at one side of the desk, and those he does not know at the other side. Or he may arrange them in some certain order on the blackboard. Or, if there are several duplicates of each word, he may sort the words, placing together those which are alike. Later in the year these words may be used to form sentences, which may be original or copied.

Caution: Be sure to take time to hear the children repeat the words which they have arranged on their desks.

Exercise 3. — Finding, matching, and arranging words. **Grade I.**

Material: Cardboard containing large copy of each word, boxes or envelopes containing printed duplicates of the same word.

After teaching fifty words as wholes, write each word in script with a rubber pen upon a sheet of cardboard

about ten inches long and five wide. As these words are to be seen by the children across the room, it is necessary that they should be written in a very large plain hand.

With twine, fasten six of these words together to form a ladder. Form nine or ten of these ladders. At first hang one of these ladders on the wall. Give the children boxes containing these same words in print, two copies of each word on all the ladders, — about one hundred words in all. The child forms the ladder twice on his desk. As he is obliged to search among all his words for the correct ones, he is employed for a considerable time, during which period he is attentively observing the forms of the words. Soon all the ladders may be hung upon the wall and the child may copy any that he chooses. The boxes and words are numbered so that lost words may be returned to the box in which they belong.

This is good work for spare minutes, and is suitable for use at any time during the year.

Exercise 4. — Individual work selected by the pupils. **Grades I. and II.**

Material: Blank book, or block of paper.

Each child may have a block of paper in his desk to be used as a "scribbling block." He is allowed to put anything he chooses upon it. If preferred, a small book may be made by fastening several sheets of paper together with clasp-fasteners.

Exercise 5. — Tracing and copying. **Grade I.**

Material: Written word or sentence; the paper for copying.

Give each child a slip of paper, on which is written a sentence or word in large script. The child first traces over the lines on the slip, then copies the same word or sentence on another slip of paper.

Exercise 6.—Finding and matching words. **Grade I.**

Material: Pictures, envelopes, printed words.

Have envelopes filled with pictures. On each picture is written the word which is suggested by the picture. On the outside of each envelope are written the words corresponding to the pictures within. The children place the pictures on the desk in the order designated on the envelope. This necessitates finding and matching the words.

Exercise 7. — To secure familiarity with forms of letters. **Grade I.**

Material: Sheets of cardboard containing large letters.

Letters one and two inches in height are drawn on cardboard (6×8 in.).

The children may cover the outlines with split peas or lentils.

Later they may lay the letter on the desk and copy the outline.

Finally, they may copy words in the same way from a slip of paper, or from the board.

Exercise 8. — Sentence-building. **Grades I. and II.**

Material: Written or printed sentences cut into separate words, envelopes.

On the outside of envelopes write or print five or six sentences. Write or print five or six copies of the

same sentences, cut up into separate words, and place in the envelope. The children find the words of the sentences and place them on the desk in the order indicated on the outside of the envelope.

Exercise 9. — Drill in recognizing words.

Grades I. and II.

Material: Scraps from newspapers or magazines.

Pupils mark words which they can recognize and name.

After teaching a word or letter, give the children a page of an old magazine or book, or a bit of newspaper, and let them draw a line through the word or letter, wherever they may find it.

Exercise 10. — Finding words in unfamiliar pages.

Grades I. and II.

Material: Scraps from magazines.

Let the children hunt in the pages of magazines, etc., for words of one letter, two letters, three letters, etc., and cross them when found. Let them mark all known words which they find on the paper given to them.

Let them hunt for words beginning with capitals, or for words beginning with certain letters, or for words whose initial letters follow in the order of the alphabet, or for words that end in a certain letter.

Exercise 11. — Copying sentences.

Grades I., II., and III.

Material: Sentences written upon the blackboard, printed slips; hectograph.

The children may copy maxims, or poetry from the blackboard, or better, from printed slips on the desk. The hectograph may be used in writing the slips.

Exercise 12. — Assorting words. **Grades I., II., and III.**

Material: Printed pages mounted upon cardboard, cut into separate words.

Paste leaves of worn-out books on this cardboard or stiff paper and cut the sheet into words. Give each child a generous handful. He may separate words of two letters from those of three, four, or five. Or he may place together words of two letters, those of three letters, etc.

Children may select words beginning or ending with a certain letter of the alphabet, or words like those written on the board. Later in the year the children can tell by sight or sound most of the words, and may place known words at one side of the desk, and unknown at the other side.

Exercise 13. — Word-building. **Grades I. and II.**

Material: The alphabet, in separate letters on cardboard.

Procure from the printer, cards containing many copies of the alphabet. He will cut them up, if preferred. Provide an envelope for each child, and place ten sets of letters in each envelope. On the outside of each envelope place a combination of letters occurring very frequently in words; e. g., *ing*. Underneath these letters place consonants. The child finds the letters designated and those required to complete the words of the same

r
s
w
th
fl
br

"family," and places them on his desk in the order indicated on the envelope.

Exercise 14. — Making lists of words. **Grades I. and II.**

Material: Words containing certain sounds.

Print five vowels with a pen, on the outside of strong envelopes. Make on the hectograph five lists of short words, ten words in each list. Each list should contain words having the same vowel sound; for example, cat, fat, man, can, ran, rat, hat, that, cap, trap, bell, sell, tell, well, fed, bed, red, Ned, pet, wet, etc.

Cut up the lists into single words, and place words of all the lists in each envelope. Place on the board the five vowels and call the attention of the children to "a," giving the sound. Ask them to find all the words in their envelopes containing that sound, and place them in a row on the desk. Proceed in the same way with each of the other vowels.

It will be necessary to work with the children for a few lessons before giving them this exercise as busy work.

Exercise 15. — Like Exercise 14. **Grades I. and II.**

A second set of envelopes may be prepared containing combinations of letters frequently found in words — namely, ship, dish, wish, shed, shut, shot, sheep, shell, fish, — words containing the letters *oa*, *ow*, etc. This exercise may be given after the children have made some progress in phonics.

Exercise 16. — Arranging letters of the alphabet. **Grade I.**

Material: Boxes of letters.

From his box containing the letters of the alphabet, duplicated ten times, the child first puts all like letters

together, repeating the names to the teacher, at the end of busy work period.

Next place the letters in alphabetical order. Then he may form short words with these letters, having a copy on a slip, or on the board.

Exercise 17. — Copying sentences. **Grades I. and II.**

Material: Boxes of letters.

Copy sentences, with the letters, from slip or board. Make original sentences in the same way.

Note: Exercises 16–18 should be employed chiefly at the period when the children need practice in recognizing and naming the letters, and while they are fixing the order of the alphabet.

Exercise 18. — Copying sentences. **Grades I. and II.**

Material: Pictures cut from magazines; written sentences.

Cut from books and magazines good pictures about two inches square. Paste these on school writing-paper. Write a few sentences about the picture. Let the children copy the sentences.

Exercise 19. — Story-telling by the aid of pictures. **Grades I., II., and III.**

Material: Pictures and words.

On the next set of papers, place a picture and a few suggestive words. Now the children write the story by aid of these words.

Finally the children construct a story from the picture, without any aid.

Variety in this exercise is afforded by allowing children to write simply names of objects seen in the picture.

Exercise 20. — Copying sentences. **Grades I. and II.**

Material: Printed sentences.

Give children slips of paper containing printed sentences. Under the printed sentence, the child writes the same sentence.

Next paste four or five sentences from old First Readers on a card. Give each child a card. He is to write these sentences on paper given to him.

Later, use books for the same purpose.

Exercise 21. — Finding and copying sentences of a certain kind. **Grades I., II., and III.**

Material: First Readers.

During the last few months the children are able to find a few "telling" (declarative) and "asking" (interrogative) sentences, from any First Reader, and copy same on paper.

Exercise 22. — Silent reading. **Grades I., II., and III.**

Material: Books or scraps pasted upon cardboard.

Let the children study sentences from a card and, after reading silently, copy on paper. Later, let them write the sentences from memory.

Later (during last five months of first grade) the children may read books in their seats.

Exercise 23. — School library.

Grades I., II., and III.

Material: Collection of picture-books.

Have a collection of picture-books which the children may take when other work is finished, or at the teacher's pleasure.

Exercise 24. — Make lists of words, following directions. Grades I. and II.

Material: Boxes of letters.

With letters the child makes the words of the spelling lesson which have been written on the board.

Later, he makes with letters lists containing names of ten birds, ten trees, etc.

After this exercise with separate letters, the child is better able to do the same thing with pencil and paper.

Exercise 25. — Filling blanks. Grades I. and II.

Material: Prepared sentences.

Write on slips of paper easy sentences, leaving blanks; namely, "I see a —— dog." Let each child have a few slips, and copy the sentences on paper, filling in the blank.

Exercise 26. — Copying sentences. Grades I. and II.

Material: Slips from old writing-books.

If possible, procure, from firms publishing writing-books, slips containing letters of alphabet, capital and

small. These may be hectographed by teacher if they cannot be otherwise obtained.

The children use these as a copy at the desk.

Exercise 27. — Original sentences. **Grades I. and II.**

Material: Paper and pencil.

Place on the board the name of some interesting object, as "doll." The children write as many sentences as they can about the object.

Exercise 28. — Preparing for oral spelling.

Grades I. and II.

Material: Paper and pencil.

The children select three words from the reading-book, and make a neat column, by repeating these words a certain number of times on paper.

Later in the day these papers are collected, and the children have a lesson in oral spelling. Each child spells the three words that are found on his paper. The pupils who fail take their papers and study again.

This exercise is practically free from the objection used against oral spelling, — that the children are obliged to listen to incorrect spelling.

Exercise 29. — Matching words, an aid in making the transition from script to print. **Grade I.**

Material: As each word is taught from the board, make from twenty-five to thirty copies of it, both in script and print. Use black ink for the script and

red ink for the printed form. Place the script and printed forms of the several words in boxes or envelopes, ready for distribution.

Direction: Use this material for busy work, preparatory to the transition from board to chart, or from board to books.

V.

LANGUAGE, SPELLING, AND READING

(*Continued*)

Exercises to be used chiefly in Grades II. and III.

Exercise 1. — Spelling charts.

Make spelling charts of lists of words. Charts may be separated into those of words with "short a," "long a," etc. Charts may be made of large sheets of heavy manila paper, the words written with a rubber pen, large enough to be seen across the school-room. Each child should be provided with a box of letters. Let children form words from chart one day; the next day reproduce as many as possible from memory. Later in the year, words from reading-book may be utilized, any given sound being the basis of work.

Exercise 2. — Stories from pictures.

Pictures may be made useful, if they are cut out and mounted. Each child has a picture and some letters. He is to study the picture carefully, then place it at the top of his desk, and make a sentence or sentences about it with his letters.

Exercise 3. — Language cards.

A set of language cards, each having a picture with a story on one side, may be used as follows: —

The story is cut from the picture, and each sentence cut up into words or phrases. The original story,

written on heavy paper or cardboard, is put into an envelope with the picture and cut-up sentences. The children are to arrange the sentences. Later in the year, the pictures alone (without the sentences), and others collected for the purpose, are given out with boxes of letters, and simple stories about the pictures are made by children.

Exercise 4. — Lists of words.

Use boxes of letters, or write the lists.

1. Lists of hard words are made.
2. Lists of words beginning with certain letter or sound.
3. Lists of words containing a certain letter or sound.
4. Lists of words having a given ending.
5. Words of the special reading lesson.
6. Sentences which tell something.
7. Sentences which ask questions.

Exercise 5. — Copying or building phonic lists.

Class to write lists of words, building from certain combinations, as

at	ate
that	plate
flat	slate

Pupils to write lists of words (a definite number, as ten or twenty) beginning with a given letter or letters, as, *b*, *g*, *v*, *wh*, *th;* or words having a given combination of letters within the word, as, *ai*, *ea*, *ie*, *ow*, *oa;* or words which end with silent *e*, or *t*, or *ing;* or words which have a double consonant or vowel.

Exercise 6. — "Catch words."

Children to write lists of *catch* words; that is, words with silent letters, as *thought.* The *ugh* does not speak, and must be "caught" and put into the word, else it "catches" the children when spelling.

Exercise 7. — Lists of words containing a given number of letters.

Class to write columns of words containing a certain number of letters or syllables.

Exercise 8. — Words in sentences.

The first part of the school year, words printed or written on cards may be given to the pupils.

Each child studies the words on his cards, then writes them on paper. Later, the children may put these words into sentences.

Exercise 9. — Words from reading lesson.

After the words at the head of the lesson in the Reader have been sounded and spelled, pupils may look for them in the story, and make lists, putting number of paragraph in which each is found over the word; for example, —

4	5
loved	children
8	3
board	asked
5	7
course	said

Exercise 10. — Phonic lists enclosed in a frame.

At the beginning of the school year, after a sound drill, each child is given a cardboard oblong, 2 by 4 inches. He is to draw around it, and in the enclosed space write all the words he can find in his Reader containing the sound or sounds just reviewed.

Exercise 11. — Use of clippings.

Columns from a magazine or from any other good reading matter may be distributed to class, and children be required to underline known words, copying the same on strips of paper, if time permit.

Exercise 12. — Copying selections.

Children may copy certain paragraphs from the Reader after words have been spelled, attention being given to capitals and punctuation as well as spelling.

Exercise 13. — Sentences from Reader.

The teacher may select ten or more hard words from the reading lesson. Have the children copy the sentences containing these words from the Reader, and later have them read the sentences from the paper instead of the book. This aids transition from print to script, and emphasizes the importance of using the exact words of the text.

Exercise 14. — Selections for children's blank books.

Children may copy poems in blank books. The poems may be those which have been learned from month to month, expressing the month's nature work or that of the season.

Exercise 15. — Difficult words.

Selections may be copied, then hard words written in columns underneath, each child choosing his own words.

Exercise 16. — Punctuation.

Sentences from special page or pages of the Reader may be copied the first of the year.

1. Those which tell something, being careful how they begin and end. (Capitals and periods.)
2. Those which ask questions, being careful how they begin and end. (Capitals and interrogation points.)
3. Sentences which contain names of persons.

Exercise 17. — Material for spelling.

Sentences on work of the season copied and used for spelling lesson.

Exercise 18. — Mottoes.

Maxims and mottoes copied by class.

See pages 134–139.

Exercise 19. — Pilgrim book.

In November or December, as a development of the talks about Thanksgiving and Forefathers' Day, a form of busy work which has delighted some little people is making "The Pilgrim Book." Material for the class: blank books, pictures, scissors, paste, sticks. The teacher should show, on charts or blackboard, just how she wishes each page of blank book to be arranged. The work may be divided into several lessons, leading up to the finished result.

Such books may be made in connection with other subjects and seasons, — as, Thanksgiving, June, Occupations, Animals, Flowers.

Exercise 20. — Original sentences.

Give each child a definite number of words on a card. Pupil may copy and put given words into sentences.

Exercise 21. — Questions and answers.

The teacher may write on board questions about the reading-lesson, the answers to which will form a short connected story. Children write the answers. Pupils are expected to pay attention to margin, punctuation, capitals, and spelling, and also to put title at the beginning.

Exercise 22. — Words in sentences.

Lists of words are written by teacher on blackboard or chart. Pupils make sentences containing words in the lists. A help to spelling and language in second half of year.

Exercise 23. — Use of pictures.

Children may write stories from large picture hung before the class, hints having been written on blackboard; use small pictures at desks in the same way.

Descriptions of flowers, fruits, animals, or birds, written and studied; sometimes with topics on the board, other times without.

Exercise 24. — Mounted pictures and words.

Make a collection of small pictures selected from magazines, school papers, old books, or any other source. Suitable boxes may be collected by the children. The pictures must be mounted, and a box for each child is a necessity. Into each box are put from ten to twenty mounted pictures, and five slips of cardboard for each picture, each slip having the name of the picture on it. Every slip, picture, and box is numbered, the number of slip and picture corresponding to the number of box in which they belong. If either one is found out of its place, it may, in this way, easily be returned to its proper box. The boxes have names typical of the pictures within. One may be an "Indian box," another a "plaything box," another a "vegetable box," and so on. When the boxes are given to the class, each child arranges his pictures on his desk, and puts the five slips which tell the name of a picture under the picture to which they belong.

Exercise 25. — Library.

A school library of the simplest sort may be made available even to children in the primary schools, so that they may be accustomed to the independent use of books. The tendency of the school is to direct class work and ignore individual choice. This may be corrected by the use of a library.

Collect books from every possible source: picture-books or story-books which the children may lend for the purpose, or which are contributed from the garret collections of the neighborhood; old magazines; partial sets of supplementary reading books; old text-books.

Place these upon a table or a shelf within reach of the children. If a table is used, let a group gather about it and use the books at pleasure during a prescribed period. Or, let the children who complete their work before the others, have this opportunity to read; and lest the slower ones be forgotten, assign a special period when they may use the books instead of doing other work. Encourage the children to tell what they enjoy in a book, to describe the pictures which they have seen, or to relate the stories which they have read. In some cases, read to the children from story-books which they bring, so that they may acquire the notion that their lessons in reading are intended to develop the power to use books for themselves.

By this means, even with a meagre provision for reading, the library may be made a very valuable part of the equipment of the school.

VI.

A SERIES OF EXERCISES IN PHONICS AND SPELLING

PREPARED BY

A. B. B.

Grades II. and III.

THE following series of exercises suggest phases of word study which may profitably employ pupils in connection with phonics or spelling. Key words are provided from which the children, by prefixing initial letters, may make new words having the same final sound. The lists may be read afterward to the class, and the new words used in sentences, spelled orally, or written from dictation. The exercises have been carefully prepared by one who has made a thoughtful study of phonics with her own classes. They will be found to contain many fundamental combinations which should become familiar to the children.

In other exercises the addition of the silent *e*, or of the various suffixes, enables the children to spell the common derivatives and to recognize the law which governs the spelling. The meaning of the derivative is taught at the same time, and the pupils are thus helped to consider the relations of words which are derived from the same root. This practice will prove very helpful when the knowledge is applied in reading. — ED.

BOARD OR CHART WORK (A)

GUIDE

Key Words.	*Initial Letters.*
1. and	1. b, gr, h, l, s, st.
2. end	2. b, l, t, s, sp, r, w, bl.

CLASS EXERCISE

Form with letters or write in columns.

Result:

1. and, band, grand, hand, land, sand, stand
2. end, bend, lend, rend, tend, send, spend, wend, blend

SUPPLEMENTARY EXERCISES (B)

GUIDE

Key Words.	*Initial Letters.*
1. eat	1. b, h, s, tr, wh, n, m.
2. each	2. b, p, r, t, pr.
3. ear	3. n, t, r, f, h, d, dr, sh, sp, y.
4. oil	4. b, c, t, s, sp.
5. all	5. b, c, f, t, w, sm, h, st.
6. ill	6. b, h, f, s, t, st, g, w, w, p, sp, dr, qu, gr, tr.
7. ink	7. dr, br, r, ch, s, w, th, l.

Suggestions:—

1. At the close of a busy work period, let the class volunteer to pronounce and spell each word in any list.

2. During some future busy work period, have the lists copied from the board or chart into the blank books reserved for spelling.

BOARD OR CHART WORK (C)

GUIDE

Key Words.	*Final Letters.*
1. thin	1. k, g.
2. sin	2. k, g, ge.
3. chin	3. k.
4. ban	4. k, g, d.
5. sun	5. k, g.

CLASS EXERCISE

Form with letters or write in columns.

Result:
1. thin, think, thing.
2. sin, sink, sing, singe.
3. chin, chink.
4. ban, bank, bang, band.
5. sun, sunk, sung.

SUPPLEMENTARY EXERCISES (D)

GUIDE

Key Words.	*Final* e *added.*
1. slop	1. slope
2. hop	2.
3. rod	3.
4. slid	4.
5. din	5.
6. twin	6.
7. trip	7.
8. snip	8.

Key Words.		*Final* e *added.*
9.	fin	9.
10.	us	10.
11.	at	11.
12.	bit	12.
13.	tub	13.
14.	cub	14.
15.	cut	15.
16.	not	16.
17.	tun	17.
18.	ton	18.
19.	shad	19.
20.	rob	20.

MODIFIED VOWELS (E)

GUIDE

1.	cot	1.	coat
2.	rod	2.	
3.	am	3.	aim
4.	ran	4.	
5.	pan	5.	
6.	far	6.	fair
7.	star	7.	
8.	bar	8.	bear
9.	tar	9.	
10.	car	10.	care
11.	bar	11.	
12.	far	12.	
13.	slop	13.	sloop
14.	stop	14.	
15.	shot	15.	
16.	hot	16.	
17.	cot	17.	

18.	drop	**18.**	
19.	crop	**19.**	croup
20.	sop	**20.**	

BOARD OR CHART WORK (F)

GUIDE

Key	*Words.*	*Suffix.*
1.	bake	**1.** -r
2.	make	**2.** -r
3.	talk	**3.** -er
4.	walk	**4.** -er
5.	buy	**5.** -er
6.	dream	**6.** -er
7.	work	**7.** -er
8.	sleep	**8.** -er
9.	creep	**9.** -er
10.	preach	**10.** -er
11.	sell	**11.** -er
12.	steam	**12.** -er
13.	wait	**13.** -er
14.	read	**14.** -er
15.	trade	**15.** -r
16.	ride	**16.** -r

BUSY WORK EXERCISE

Form with letters or write in separate columns the *action* word, the *name* word.

Suggestions: —

1. At the close of a busy work period have each word pronounced, spelled, and used in sentence-building.

2. Have these words copied from board or chart lists, during a future busy work period, into the blank books reserved for spelling.

SUPPLEMENTARY EXERCISES (*G*)

GUIDE

Key Words.	*Suffix.*
1. run	1. n-er
2. gun	2. n-er
3. spin	3. n-er
4. win	4. n-er
5. sin	5. n-er
6. trim	6. m-er
7. hum	7. m-er
8. drum	8. m-er
9. rob	9. b-er
10. clip	10. p-er
11. ship	11. p-er
12. chop	12. p-er
13. hop	13. p-er
14. stop	14. p-er
15. cut	15. t-er
16. shut	16. t-er
17. fit	17. t-er
18. wrap	18. p-er

CLASS EXERCISE

Form with letters or write in separate columns a list of *action* words, a list of *name* words. Call attention to the "doubling" of the final consonant before *er* can be added.

Suggestions: —

1. Have each word in a list pronounced, spelled, and used for sentence-building.

2. Have the lists copied, during a future busy work exercise, into the blank books reserved for spelling.

BOARD OR CHART WORK (H)

GUIDE

Key Words.	*Suffix.*
1. run	1. n-ing
2. sun	2. n-ing
3. gun	3. n-ing
4. pin	4. n-ing
5. sin	5. n-ing
6. win	6. n-ing
7. trim	7. m-ing
8. hum	8. m-ing
9. drum	9. m-ing
10. slam	10. m-ing
11. stop	11. p-ing
12. chop	12. p-ing
13. hop	13. p-ing
14. slip	14. p-ing
15. whip	15. p-ing
16. skip	16. p-ing
17. ship	17. p-ing
18. trip	18. p-ing
19. drip	19. p-ing
20. get	20. t-ing
21. fret	21. t-ing
22. pat	22. t-ing
23. cut	23. t-ing
24. sit	24. t-ing

CLASS EXERCISE

Form with letters or write in separate columns the two forms of the action word. Call attention to the "doubling" of the final consonant before *ing* can be added.

Suggestions: —

1. Have the words in each list pronounced, spelled, and used in sentence-building.

2. Have each list copied from the board or chart into the blank books reserved for spelling.

BOARD OR CHART WORK (I)

GUIDE

Key Words.	*Suffix.*
1. trim	**1.** m-ed
2. hum	**2.** m-ed
3. slam	**3.** m-ed
4. drum	**4.** m-ed
5. drag	**5.** g-ed
6. rig	**6.** g-ed
7. bag	**7.** g-ed
8. peg	**8.** g-ed
Change of Pronunciation	
9. slip	**9.** p-ed
10. chip	**10.** p-ed
11. trip	**11.** p-ed
12. stop	**12.** p-ed
13. chop	**13.** p-ed
14. drip	**14.** p-ed
15. whip	**15.** p-ed
16. clip	**16.** p-ed
Change of Pronunciation	
17. fret	**17.** t-ed
18. pet	**18.** t-ed
19. trot	**19.** t-ed
20. pat	**20.** t-ed

CLASS EXERCISE

Form with letters or write in separate columns the *present* and the *past* form of the *action* word.

ed-t ed-ed

Suggestions: —

1. Have each word in a list pronounced, spelled, and used in sentence-building.
2. Have each list copied from the board or chart into the blank books reserved for spelling.
3. Call attention to the "doubling" of the final consonant before *ed* can be added.

BOARD OR CHART WORK (J)

GUIDE

Key	*Words.*		*Suffix.*
1.	come	1.	com-ing
2.	have	2.	hav-ing
3.	save	3.	sav-ing
4.	live	4.	-ing
5.	give	5.	-ing
6.	smile	6.	-ing
7.	twine	7.	-ing
8.	shine	8.	-ing
9.	dine	9.	dining
10.	dive	10.	-ing
11.	drive	11.	-ing
12.	chase	12.	-ing
13.	trace	13.	-ing
14.	lace	14.	-ing
15.	slide	15.	-ing
16.	ride	16.	-ing

Key Words.	*Suffix.*
17. hide	17. -ing
18. skate	18. -ing
19. make	19. -ing
20. wake	20. -ing
21. shake	21. -ing
22. bake	22. -ing
23. quake	23. -ing

CLASS EXERCISE

Form with letters or write in separate columns the *action* words and their present participles, by dropping the final *e* of the " stem " and adding *ing*.

Suggestions: —

1. Use as an oral spelling lesson.
2. Write the lists upon the board and require the class to copy them into the blank books.

BOARD OR CHART WORK (K)

GUIDE

Key Words.	*Suffix.*
1. storm	1. storm-y
2. rain	2. rain-y
3. snow	3. -y
4. might	4. -y
5. frost	5. -y
6. wind	6. -y
7. moss	7. -y
8. gloss	8. -y
9. dress	9. -y
10. flesh	10. -y
11. thorn	11. -y

Key Words.	*Suffix.*
12. dust	12. -y
13. gust	13. -y
14. slush	14. -y
15. trust	15. -y
16. grain	16. -y
17. grass	17. -y
18. thirst	18. -y
19. health	19. -y
20. wealth	20. -y
21. hair	21. -y
Change of Spelling	
22. juice	22. -y

Omit the final *e* before adding *y* to the " stem."

CLASS EXERCISE

Form with letters or write in separate columns the name word and the descriptive word, by adding *y* to the *stem.*

Suggestions: —

1. Use the list for an oral spelling lesson and for language.

2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK (*L*)

GUIDE

Key Words.	*Suffix.*
1. pretty	1. pretti-ly
2. merry	2. merri-ly
3. happy	3. -ly

Key Words.	*Suffix.*
4. cheery	4. -ly
5. dreary	5. -ly
6. weary	6. -ly
7. stormy	7. -ly
8. mighty	8. -ly
9. worthy	9. -ly

CLASS EXERCISE

Form with letters or write in separate columns descriptive words and words expressing *manner*.

Suggestions: —

1. Use for an oral spelling and language lesson.
2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK **(*M*)**

GUIDE

Key Words.	*Suffix.*
1. pony	1. poni-es
2. penny	2. penni-es
3. daisy	3. -es
4. pansy	4. -es
5. baby	5. -es
6. lady	6. -es
7. berry	7. -es
8. cherry	8. -es
9. ferry	9. -es
10. pussy	10. -es
11. fairy	11. -es

CLASS EXERCISE

Form with letters or write in separate columns the form for *one* and *more than one*.

Suggestions: —

1. Use each list for a lesson in oral spelling and language.

2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK (N)

GUIDE

Key	*Words.*		*Suffix.*
1.	rest	1.	rest-less
2.	cheer	2.	cheer-less
3.	help	3.	-less
4.	truth	4.	-less
5.	mirth	5.	-less
6.	worth	6.	-less
7.	hair	7.	-less
8.	friend	8.	-less
9.	mother	9.	-less
10.	father	10.	-less
11.	doubt	11.	-less
12.	rider	12.	-less
13.	number	13.	-less
14.	home	14.	-less
15.	house	15.	-less
16.	seed	16.	-less
17.	thought	17.	-less
18.	joy	18.	-less

CLASS EXERCISE

Form with letters or write in separate columns *name* words and the descriptive words formed by adding *less* (in the sense of without) to the stem.

Suggestions: —

1. Use the lists for an oral spelling and language lesson.

2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK (O)

GUIDE

Key Words.		*Suffix.*	
1.	truth	1.	truth-ful
2.	help	2.	help-ful
3.	cheer	3.	-ful
4.	mirth	4.	-ful
5.	rest	5.	-ful
6.	joy	6.	-ful
7.	fruit	7.	-ful
8.	waste	8.	-ful
9.	boat	9.	-ful

Change of Spelling

Key Words.		*Suffix.*	
10.	beauty	10.	beauti-ful
11.	duty	11.	-ful
12.	mercy	12.	-ful

CLASS EXERCISE

Form with letters or write in separate columns name words and descriptive words formed by adding *ful* (in the sense of *with* or *full of*) to the stem.

Suggestions : —

1. Use the lists for oral spelling and language.
2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK (P)

GUIDE

Key	*Words.*		*Suffix.*
1.	wood	1.	wood-en
2.	gold	2.	gold-en
3.	oak	3.	-en
4.	leather	4.	-n
5.	earth	5.	-en
6.	feather	6.	feather-y
7.	silver	7.	-y
8.	leather	8.	-y
9.	brass	9.	-y
10.	earth	10.	-y

CLASS EXERCISE

Form with letters or write in separate columns name words and the descriptive words derived from them by adding *en*, *n*, or *y* to the *stem*.

Suggestions : —

1. Use the lists for oral spelling and language.
2. Write the lists upon the board for the class to copy into the blank books.

BOARD OR CHART WORK (Q)

GUIDE

I.

Key	*Words.*		*Suffix.*
1.	pink	1.	pink-ish
2.	yellow	2.	yellow-ish

Key Words.		*Suffix.*	
3.	green	3.	-ish
4.	brown	4.	-ish
	Change of Spelling		
5.	red.	5.	red-dish

"Double" the *d* before adding *ish*.

GUIDE

II.

Key Words.		*Suffix.*	
1.	dark	1.	dark-ness
2.	white	2.	-ness
3.	red	3.	-ness
4.	dim	4.	-ness
5.	bright	5.	-ness
6.	polite	6.	-ness
7.	kind	7.	-ness
8.	tender	8.	-ness
	Change of Spelling		
9.	happy	9.	-iness

Change *y* to *i* before adding *ness*.

CLASS EXERCISE

Form with letters or write in separate columns descriptive words and their forms to denote *diminished quality*, by adding *ish* to the stem; form or write descriptive words and the name words derived from them, by adding *ness* to the stem.

Suggestions: —

1. Use the lists for oral spelling and language.

2. Write the lists upon the board for the class to copy into the blank books.

MISCELLANEOUS EXERCISES IN SPELLING AND WORD STUDY

Exercise 1.

Make a list of the common homonyms, as, to, two; by, buy. Direct the children to use them correctly in sentences.

Exercise 2.

Write upon the blackboard different forms of the same root word to be used in sentences, as, help, helpful, helping, helpless, helped, helper, helpfully.

Exercise 3.

Direct children to copy from reading-books words having certain endings, as, *ing*, *er*, *est*; words having certain prefixes or suffixes, as, *un*, *ful*.

Copy all abbreviations found.

Exercise 4.

Write on the blackboard a list of verbs whose past and whose present participle are formed regularly, and require class to copy and complete list like the model, as, —

add,	added,	adding.
return,		
ask,		

Note: The terms which are used in the directions to the teacher are not intended for the pupil. Children of these grades will not of course understand grammatical terms. They can, however, discover groups of words having kindred meaning and derived from the same root.

Exercise 5.

Work similar to the above may be done with adjectives, the class writing all forms, as, —

long,	longer,	longest.
full,		
tall,		

Exercise 6.

Later, similar work may be done with verbs having final *e*, as, —

love,	loved,	loving.
care,		
move,		

Also with nouns forming plurals regularly and irregularly, as, —

sister,	sisters,
daisy,	daisies,
donkey,	donkeys.

With words doubling final consonant, as, —

plan,	planned,	planning.
hot,	hotter,	hottest.

Exercise 7.

Distribute cards with such words as *felt, slip, thus, rife, life;* have the words formed with the cut letters; have the letters in each word transposed to form a new word; namely, *left, lips, shut, fire, file.*

Exercise 8.

Select some word, as *pasture;* have words formed from it by selecting and transposing the letters in it.

Exercise 9.

Select and copy from the reading-books, words

(*a*) beginning with a certain letter,
(*b*) ending with a certain letter,
(*c*) containing a specific number of letters,
(*d*) containing a specific number of syllables,
(*e*) denoting the names of fruits,
(*f*) denoting the names of vegetables,
(*g*) denoting the names of animals,
(*h*) denoting the names of people,
(*i*) denoting the names of places,
(*j*) denoting facts about the weather, including the phenomena of nature,
(*k*) denoting number, quantity, and size.

VII.

MISS FULLER'S PHONIC DRILL CHART

THE accompanying drill chart, for practice in phonics, was prepared by Miss Sarah Fuller, Principal of the Horace Mann School for the Deaf. It is published by D. C. Heath & Co., Boston, whose courtesy in permitting its use is gratefully acknowledged. For the directions for using the chart, we are indebted to Miss Fuller.

DRILL CHART

Final Consonants.	—m	—p	—th	—x	—l
	—v	—t	—s, —c	—b	—g (j)
	—th	—k, —c	—sh	—d	—ng
	—n	—f	—ch	—g	—z, —s
Initial Consonants.	m	v	th	n	p	t	k, c	f	th
	s, c	sh	ch	b	d	g	l	j, g	z, x
	s, z (zh)	q	r	w	wh	y	h		
Order of Vowels.	ŭ	ä	ī	ē	ĭ	ā	ĕ	ă	ô	û
	ō	â	ŏ	ū	ü	á	öŵ	öĭ		

TO THE TEACHER. — The pupil will read each vowel element in combination with each final consonant, and will also read each initial consonant with each vowel and final consonant; thus, *u* will be read *um*, *uv*, *uth*, *un*, *up*, etc., and, also, *mum*, *muv*, *muth*, *mun*, *mup*, etc., *vum*, *vuv*, *vuth*, *vun*, *vup*, etc.

u, cup	o, son ou, young	e, bell	ea, bread ai, said	o, dog	a, wasp
a, father	ar, arm au, aunt	a, fan		u, tube	ew, few
i, pipe	ie, pie y, cry	o, do	oo, boot u, rude	u, fur	i, girl e, her
e, me	ea, eat ee, teeth	u, put	oo, foot	a, fare	ai, chair ea, pear
i, pin	y, baby ai, curtain	o, home	oa, soap ow, snow	ow, cow	ou, mouth
a, slate	ai, nail ay, day	a, ball	aw, saw or, fork	oi, boil	oy, boy

m arm mat —m m—	k c fork key arc cow —k k— —c c—	b tub boy —b b—	s (zh) z (zh) measure glazier ——s— —z—
v stove vase ——v v——	f cuff fan ——f f——	d bird doll ——d d——	q wh quill whip q—— wh—
~~th~~ with the —~~th~~ ~~th~~–	th mouth thumb ——th th——	g dog gun —g g—	r y rat yacht r— y——
n fan nut —n n—	s c mouse sun face cent ——s s— —c c—	l ball leg —l l—	w h wasp hat w—— h—
p cup pin —p p—	sh fish shell –sh sh—	j g jug cage gill j— —g g—	x box —x
t hat top —t t—	ch watch chain ——ch ch——	z s fez zinc nose —z z— ——s	ng ring —ng

Directions

Distribute the charts, at the same time giving to each child two or three vowels written upon little squares of card-board. All the more common spellings of a vowel-sound should be written under the vowel as it appears on the drill-chart, as, —

a
ai
ay
a-e

It will add to the interest of the lesson if care is taken that no two children have the same vowels to work with; at least those seated near each other should have different ones.

Either mention or write upon the blackboard an initial consonant. Require each child to pronounce silently the syllables which result from combining the given consonant with one of the vowels and every final. (For example, if the initial is *m* and the vowel *o*, the resulting combinations would be moon, move, month, moor, etc.) As he comes to a combination which is a vowel contained in his own speaking vocabulary, let him write it down, spelling it as best he can.

Enough vowels should be supplied to insure employment throughout the period, the number differing with the working capacity of the individual child.

At the end of the period the teacher should call for each child's list and write every common word upon the blackboard, of course spelling it correctly; by this means each gets the benefit of the labor of all.

Many consonant combinations such as *sp*, *st*, *sk*, *sm*, *sl*, *bl*, *gr*, *pr*, *str*, *scr*, etc., may be used as initials or finals, or both.

THE VOWEL AND CONSONANT CHARTS

Direct the children to write columns of words containing (*a*) the same initials, or (*b*) the same finals, or (*c*) the same vowel sounds as the words in any selected group. It often happens that a combination which is not by itself an English word is nevertheless a syllable of some well-known word. Pupils should be encouraged to notice such syllables and to write the words of which they are a part.

Call for the lists at the end of the period, but only uncommon or unfamiliar words need be written upon the board. The exercise should be progressive; common words ought gradually to be ruled out, and the children taught to spend much thought in adding to their lists words which they have heard other people use.

Note: The fear which some teachers feel that such exercises will react unfavorably upon the spelling is not realized in practice.

S. F.

NUMBER

VIII.

NUMBER WORK FOR FIRST-GRADE PUPILS

I.

MEASURING AND CUTTING

1. Make measures eight or ten inches long and one inch wide, from cardboard. Mark off only inch lengths. Give each child a measure and slips of paper cut from any paper furnished for school use. The children may cut one-inch lengths, two-inch lengths, three-inch lengths, etc., as many of each as the teacher may indicate. **Grade I.**

2. Early in the year the children cut writing paper on the lines.

Later, cut in the same way and then cut each strip into halves. When they can do this readily, ask them to cut one whole strip, then cut the next strip into halves and place under the whole strip, the next into fourths, the next into eighths. Try the same kind of cutting with squares, circles, triangles, and oblongs.

Grades I. and II.

3. Give each child a four-inch square, also a measure, and ask him to mark and cut into one-inch squares.

Grade I.

4. During May and June let the first class mark squares of tagstock into inch squares. Then in each one of these squares they draw a number picture. Let them cut these inch squares, and let these number

pictures be sorted by the children who enter the next school year. Grade I.

5. A box of assorted sticks (eighteen cents a box) are useful in teaching measurements. Make gardens a given number of inches square, and place sticks of different lengths inside to represent the height of the plants in that garden.

All these exercises under measuring and cutting are very valuable and can be used throughout the year.

Cutting Exercise to increase Perceptions of Form and Size

(This exercise may be taken the second month of first primary year and continued several months, by children who have received full kindergarten training.)

Cut (by measure) a square of one inch side, then a two-inch square, a three-inch square, etc. Cut the same without measure. Vary by cutting oblongs, one inch by two inches, one inch by three inches, two inches by three inches, etc. Grades I. and II.

Cut forms into halves, thirds, fourths, etc. Grade I.

Cut a rectangle. Cut another twice as large, another three times as large as the first, etc.

Grades I. and II.

Cut a rectangle. Cut another one-half, one-third, or one-fourth as large. Use pins to fasten a set together.

Grades I. and II.

Drawing Exercise to teach Careful Use of Measure, and Perception of Form and Size

(This exercise may be taken the second month of first primary school year, and continued several months, by children who have received full kindergarten training.)

Draw on paper one-inch, two-inch, and three-inch squares, using measure. Continue to draw larger and larger squares. Draw the same without measure. Draw oblongs of any given dimensions, first with and then without the measure.

Draw lines one inch long, two inches long, first with, then without measure. **Grade I.**

Lines one-half inch long, one and one-half inches long, etc., in the same manner. **Grades I. and II.**

Draw forms and divide them, by lines, into halves, thirds, fourths, etc. **Grades I. and II.**

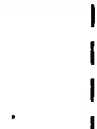
Draw a plant having four flowers. Draw another having twice as many. Draw another having three times as many. Draw one having one-half as many. Use other representations, as, a house having a certain number of windows; another having twice as many, etc. **Grades I. and II.**

II.

EXERCISES WITH PEGS

EXERCISE 1.

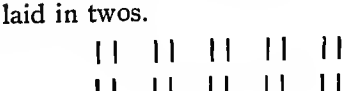
Rows laid in order of numbers.



etc. **Grade I.**

EXERCISE 2.

Rows laid in twos.



Grade I.

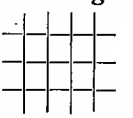
EXERCISE 3.

Rows laid in threes, etc.

||| ||| ||| |||

Grade I.

EXERCISE 4.

Tell the children to build woodpiles, laying three logs and two logs; or four logs and three logs, as 

Or tell them to make a four or five barred gate with a cross-bar, as using any number, according to the ability of the child. Grade I.

Exercises with Pegs to increase Perceptions of Relative Magnitudes

(These exercises may be used in first primary year. They may be used in the second month in school by those children who have had full kindergarten training; in the latter part of the year by those children who have not received such training.)

Lay two pegs to form a vertical (or horizontal) line. Close to the right (or left) of this line, lay a line of pegs twice as long. At some distance from these two lines, lay a vertical (or horizontal) line of three pegs. Close to the right (or left) of this line, lay a line twice as long. Lay a line of three pegs, then a line twice as long, etc. The children will be able to do this without reference to the number of pegs required, and will, incidentally, learn a good deal of number.

Vary this exercise by laying lines one-half as long as other lines; three times as long; and in the latter part of the year, one-third or one-fourth as long. Grade I.

Exercise with Pegs to increase Perceptions of Form and Relative Size

(This exercise may be used the first month of the first school year by children who have received kindergarten training, — three or four months later by children who have not had such training.)

Lay, with pegs, a small rectangle. At the right or left side, lay a rectangle of a slightly larger size. Next the same form a little larger, and so on. **Grade I.**

Lay oblongs and triangles in the same way. **Grade I.**

Lay vertical, horizontal and oblique lines, dividing them (by single pegs) into halves, thirds, fourths, etc. **Grade I.**

Lay squares and oblongs. Divide them, by lines of pegs, into halves, thirds, fourths, etc. **Grades I. and II.**

Work with Pegs and Figures

Material: Printed figures cut from calendars or bought in sheets, envelopes. Give each child pegs and envelopes containing figures.

Exercise 1.

Place figures on desks in rows. Place corresponding number of pegs below each figure. **Grade I.**

Exercise 2.

Teach the children how to lay the pegs to represent the table of twos : —

| |
| | |
| | | | etc., up to twelve twos. **Grade I.**

Exercise 3.

When the children can lay the pegs well, distribute envelopes containing figures, and let them find and place the figures corresponding to the groups, thus: —

||	2
|| ||	4
|| || ||	6, etc.

Grade I.

Teach threes and fours in the same way.

Note: Exercise I. is useful during the third and fourth months. II. and III. during the last three months.

Pegs — Signs and Figures

Purpose: Development of multiplication and division.

INTERPRETING SIGNS

The written expression is placed upon the board, as, 4×2, 2×3, 3×3, and so forth. The children take their pegs and arrange them upon their desks; two groups with four in a group in the first row, three groups with two in a group in the next row, and three groups with three in a group in the next row.

Grades I. and II.

DIVISION

In the division, if the equations are $7 \div 3$, $8 \div 4$, the children place seven pegs in the first row and divide them into groups with three pegs in each group and one peg remaining; then place eight pegs in the second row and divide them into groups with four pegs in each group.

Grade I.

Note: Use these exercises during the last two months of the first year.

III.

STRINGING BEADS

Material required: (*a*) Twenty-four spool boxes; (*b*) Twelve gray lacings; (*c*) Red and white glass beads.

These beads can be bought at toy stores at five cents a bunch. Cut lacings in halves; tie knots at the end of each string. Put fifty red and fifty white beads in each box and one lacing. (Instead of the lacing, patent shoe button needle, with strong cord attached, may be used.)

Instruct children to string a certain number of red and white beads alternately. Grade I.

This exercise aids in number and increases ability to follow directions.

Use during the first two months.

IV.

STRINGING TABLETS

Material required: (*a*) Ten gray lacings. Cut these in halves, making twenty strings. Tie knots at end of each string; (*b*) Colored tablets of different colors and different shapes. These can be bought or made from Bristol board; (*c*) Twenty boxes.

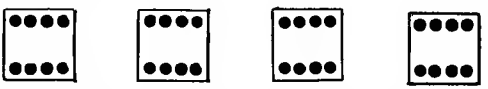
V.

WORK WITH LENTILS AND STICKS

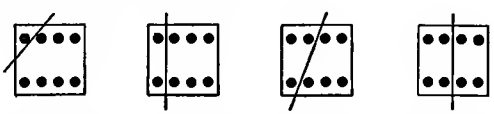
Material: Sticks and lentils. Lentils can be bought at any grocer's.

Manner of using: Make number pictures with lentils, and enclose each picture with sticks (wooden toothpicks may be used).

Make as many number pictures of any number as there are combinations of two numbers to make the number. Thus: — Grade I.



Then with extra sticks lay off the lentils to show combinations of any two numbers to make the number under consideration. Thus: —



Proceed in the same manner with all the lentil pictures.

Toothpicks may be used also in making squares, triangles, etc. Place inside groups of twos, fours, sixes, etc. Divide these into halves by placing a stick vertically, horizontally, or obliquely among them. Grade I.

VI.

SPLIT PEAS AND STICKS

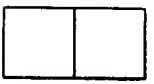
HOW THE FAMILY MOVES.

Material required: (*a*) Oblong blocks (obtained from city); (*b*) Paper and pencils (obtained from city); (*c*) Split peas, ten cents a quart; (*d*) Toothpicks and half toothpicks.

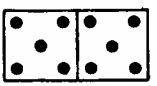
1. Make oblongs with sticks.

2. Make given number pictures with split peas. For example, picture ten at top of desk; the empty

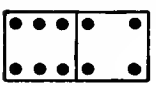
oblongs or houses, below; the family of ten moves into the empty double house. Thus:



Empty double house.



Five in each room.



Six in one room and four in the other room.

Represent all possible combinations.

The same can be represented by drawing round or oblong tablets and making rings instead of using peas.

Use this exercise during the first half of the year.

Grade I.

VII.

CARDS AND SPLIT PEAS

Use oblong cards of a convenient size. The teacher makes on the board oblongs with pictures of the number in the upper half. Children are to lay the peas on their cards in the same way and fill in the lower half with the number of peas necessary to make the number required. Grade I.

Note: This exercise is useful during the third and fourth months. Later in the year require the children to write two addition "stories" and two subtraction "stories" about the number represented in each card.

VIII.

ANOTHER WAY OF OBTAINING FIGURES

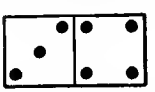
Number cards containing figures, signs of addition, subtraction, multiplication, and division, also the signs of dollars and cents, may be procured at the printer's.

After developing the different combinations in any number, give each child a box containing these figures and signs, and let them make the combinations on their desks. **Grades I. and II.**

IX.

CARDS USED AS A COPY

1. A set of cards with dots arranged domino-fashion may be painted in water-color. **Grade I.**



The cards should be of dimensions large enough to be seen across the room; the dot the size of a silver quarter. The children may copy the dots and oblongs, with the corresponding equation underneath.

$$3 + 4 = 7$$
$$4 + 3 = 7$$

Twenty-five cards will give the combinations up to ten. These cards being always at hand, no time is wasted in putting work upon the blackboard and much space is saved.

2. Letters or figures may be painted on large cards and outlined by the children with pegs or split peas. These cards should be ten by twelve inches. **Grade I.**

Use this exercise when teaching the forms of the figures.

3. Blank Cards. Cut into strips and use in the following ways: —

(*a*) Figures in order from 1–5, for children to copy.
(*b*) Same with figures from 1–10.
(*c*) Same with figures 2, 4, 6, 8, 10.
(*d*) Same with figures 1, 3, 5, 7, 9.
(*e*) Write questions in addition and subtraction without answers.
(*f*) Multiplication and division in the same way.

Grade I.

Use a, b, c, d, during the first half of the year; e, f, during the last of the year.

4. Cards prepared for Class Work. Write all the combinations from 1–10 in columns on large-sized cardboard with brush and ink.

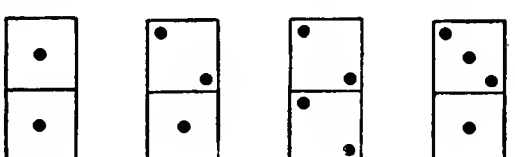
Pupils copy columns and find answers. **Grade I.**

X.

WORK WITH TABLETS

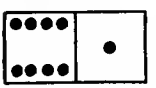
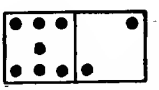
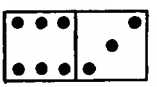
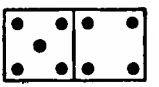
Material: Oblong tablets, one inch by two inches, cut from leather board or tagstock.

EXERCISE 1. Each child is provided with pencil, paper, and tablet. Teacher draws on the blackboard four large representations of the tablets with pictures in them, thus: —



Let some child read the pictures as the teacher points to them, thus: 1 + 2, 2 + 3, etc. No figures are to be written. Then for busy work the children mark round their tablets and copy the pictures, making as many rows as possible, without crowding. All the number pictures taught in the first grade can be made in this way. **Grade I.**

EXERCISE 2. After figures are taught, arrange as follows:

8 + 1 = 9	7 + 2 = 9	6 + 3 = 9	5 + 4 = 9
1 + 8 = 9	2 + 7 = 9	3 + 6 = 9	4 + 5 = 9
9 − 1 = 8	9 − 2 = 7	9 − 6 = 3	9 − 5 = 4
9 − 8 = 1	9 − 7 = 2	9 − 3 = 6	9 − 4 = 5

TRANSITION FROM NUMBER PICTURES TO FIGURES

Calendars of large figures are mounted upon tagstock and cut into pieces so that each piece contains one figure. Upon the back of each slip is placed the number picture corresponding to the figure upon the other side. The children arrange the number pictures, following an order upon the blackboard, and match the number pictures with the figures; or they place the figures in a given order and match these with the number pictures.

Grade I.

DOMINOES MADE FROM TAGSTOCK

Represent a number on one half, leaving the other half blank to be filled with corresponding figure.

Grade I.

ENVELOPES, FIGURES, AND SIGNS

Make a set of envelopes with fifteen examples on the outside. Inside, place the figures and signs necessary to make the questions and answers. The children then find the first figure of the first equation on the envelope, then the sign; then the next figure, then the sign and figure, which gives the answer. These are placed on the desk. **Grades I. and II.**

WORK WITH FIGURES

Material: Figures may be obtained by pasting old calendars on cardboard, then cutting the figures apart; or they may be made on cardboard with a rubber pen.

Manner of using: Give each child a handful of figures from one to ten.

1. Figures sorted and laid in rows; 2's, 3's, 4's, etc. This helps to fix the names of figures.

2. Figures laid in order of numbers, 1–10. This assists in counting.

Both 1 and 2 are useful the first of the year, or whenever it is desirable that the pupils should recognize figures.

IX.

PROBLEMS IN NUMBER FOR GRADES II. AND III.

CHILDREN of second and third grades may be very much helped by exercises which teach them how to illustrate the conditions of the problems which are presented to them in number. It often happens that children fail in arithmetic, not because they cannot add, subtract, multiply, or divide, but because they cannot picture the conditions which are stated in the problem. Their imagination is deficient. It should be trained through thoughtful exercises. If a child makes a picture to represent the problem as it appears to him, the teacher is enabled to judge whether his mental picture of the conditions is clear or vague.

For example, recall the typical problem: "James and John started from the same tree and walked in opposite directions. One walked 12 feet and the other 8 feet. How far apart were they?" The child may fail to solve this problem correctly because he does not know that 12 and 8 are 20, but the failure of the majority is due to the fact that the word "opposite" is not clearly understood by them. If, however, the pupil draws a picture of a tree and of James 12 feet away on one side and John 8 feet away on the other, he can hardly fail to get the correct result. It matters very little whether the picture or the diagram is used. The picture is more pleasing to the young child. The diagram should take the place of the picture in the third and fourth grades. Such practice will prove very helpful in stating conditions in all problems in later school life.

The following exercises are suggested for teachers who must prepare occupation for many classes and who may, therefore, desire ready-made exercises for occasional use. ED.

1. A mat is four feet long and two feet wide. How many feet of braid shall I buy to bind the mat?

2. How much fringe shall I buy for the ends of a mat six feet long and two feet wide?

3. John has two bamboo fishing-poles. One is six feet long, the other is twice as long. How many feet of bamboo in the two poles?

4. Mary made an apple-pie. She gave one-half of it to Annie and a third to Tom. How much was left for herself?

5. Kate has three times five cents. Ned has two times seven cents. Which has the more money? How much more? Show it.

6. I have a garden about four feet long and six feet wide. How many geraniums can I plant in the bed if I put them one foot apart?

7. A flag-pole stands between the house and the barn. The pole is twenty feet from the house and sixty feet from the barn. How far is it from the house to the barn?

8. May's lily has two blossoms. Ruth's has three times as many as May's. Draw both lilies.

9. A room is ten feet long and nine feet wide. How much picture moulding must be bought for it?

10. Henry's room has three windows. Each window is two yards high. His mother is making muslin curtains for the windows. How many yards of muslin must she use?

11. There are six rows of desks in a school-room and eight desks in a row. How many desks are there in the school-room?

12. I have three window-boxes with five geraniums in each box. How many geraniums have I?

13. John's book-case has three shelves. He has ten books on each shelf. How many books has he?

14. My garden is twenty feet long and twenty-four feet wide. How many feet of wire fencing must I buy?

15. Kate has one-half of twelve apples. May has one-third of fifteen apples. Show which has the greater number.

16. A mug holds half as much as a bowl. The bowl holds half as much as a pitcher. The pitcher holds half as much as a jug. The jug holds eight quarts. How much does the mug hold?

17. Henry found 7 eggs in one nest, 6 eggs in another, and 5 in another. How many eggs did he find?

18. George picked 25 peaches from a tree and gave 16 of them to a little sick boy. How many did he have left?

19. Mary found 8 buttercups and 9 daisies on her way to school. How many flowers did she find?

20. A long ladder has 13 steps, and a short one has 7; how many more steps has the long ladder than the short one?

21. In a certain school, 6 pupils sit in the first row, 5 in the second row, and 7 in the third; how many are there in the three rows?

22. How many parts has a clover leaf? How many parts have 7 clover leaves?

23. In a street there were 12 doves picking up corn, but a dog frightened away 8 of them. How many were left?

24. Kate cut an orange into 5 equal parts, and then gave away 2 of the parts. How much of the orange did she give away?

25. Divide an apple so that 8 boys may each have a piece of equal size.

26. Ned has 6 quarts of strawberries. How many pint baskets can he fill?

27. Joseph had 34 marbles, but lost half a dozen. How many has he left?

28. A schoolroom contains 35 desks; there are 7 rows. How many desks are there in each row?

29. A boy found 21 eggs in the barn. He put them in his hat to carry into the house, but fell and broke some. When he reached the house, he found a dozen eggs in his hat. How many did he break?

30. If two men start from the same place and travel in the same direction, but one travels 7 miles an hour and the other 9 miles an hour, how far apart will they be at the end of two hours?

31. A boy, having 25 cents, bought 1 quart of cherries for 10 cents, one orange for 5 cents, and some candy for 8 cents. How many cents had he left?

32. I saw 4 sleds going down hill, and on each sled was one girl and two boys. How many children did I see going down hill?

33. Ned and Jack each have a peach-tree. There are 22 peaches on Ned's tree, but only one-half as many on Jack's tree. How many peaches are there on Jack's tree?

34. A boy had 22 oranges and lost 6 of them. He divided the rest equally among 8 of his playmates How many oranges did each playmate receive?

35. Nellie saw 5 gray squirrels on one tree and 6 birds in another tree. If 2 of the squirrels and one of the birds go away, how many squirrels and birds are left?

36. Rose had 5 apples, Jack had 8 apples, Will had 9 apples, and Joe had 10. How many did they all have?

X.

EXERCISES DEMANDING PRACTICAL JUDGMENT IN NUMBER

THE common tendency in the early work in number is to emphasize the work with figures and to omit the experience which demands the use of figures. We frequently attempt to teach a child the tables when he sees no use for them. Fractions appear to him as mere figures. Pupils in grammar grades will often place figures upon the boards when called upon to show fractions.

Great care should be taken in primary grades to present the figure only as the sign of the number, and the equation only as a sign of a truth which pertains to numbers. The "process" is simply the manner of solving problems which occur in every-day life, and the written record in figures is the arithmetical statement of the thing which is done. "John has three dozen eggs. How much will he receive for them at twenty cents a dozen?" This is a practical problem which John will need to work out if he keeps hens. It is of practical interest to his mother if she buys eggs. He needs to know that three twenties are sixty. He should receive sixty cents for his eggs. In the same way it may be convenient for him to know that there are twelve eggs in each dozen; six eggs in a half-dozen; that if twelve eggs are worth twenty cents, six eggs must be worth ten cents, and three eggs worth five cents. The relation between the whole dozen and the half-dozen, the price of a whole dozen and the price of a half-

dozen, between ten and twenty, five and ten, appears in this example. The child's solution of the problem depends upon his power to see this relation. It must be remembered, however, that this relation is taught, not by mere figures, but by objects and groups of objects. He must cut objects into halves, must realize that the value of the whole is equal to the value of the two halves. He must divide objects or groups of objects, or multiply them so as to have their value, double their value, etc.

For example, he knows that he can buy a cake for ten cents. One-half the cake is, therefore, worth five cents. Two cakes would be worth twenty cents. He cuts a piece of paper to represent the cake. He must cut it into halves to represent the half-cake; he must have two equal pieces to represent the two cakes; he must recognize five as one-half of ten; ten as twice five; twenty as twice ten. These numerical facts should be taught only in connection with the study of the things themselves. The most valuable part of the primary school number work is that which emphasizes relative sizes and values and which applies the truths of number to the children's experience.

If this be true, it follows that a large portion of the drill and practice in primary number should be given to actual experience with values and the study of the relation of numbers to the numerical expression of the facts observed. The following exercises have been suggested to meet this need. They may be multiplied indefinitely by any teacher who understands how to use them wisely. ED.

EXERCISES

1. Cut a square of paper one inch side; two inches side; three inches side, etc.

Your square represents a cake. Show one-half the cake. Show one-fourth the cake.

2. Your cake is worth 12 cents. What is one-half of the cake worth? One-fourth?

3. Three boys buy the cake together. How many cents must each boy pay? Show his share of the cake by a drawing or folding.

4. Draw and cut squares having a given diameter. Let the squares represent cakes. Use them as above.

5. Draw and cut rectangles having given dimensions. A given rectangle represents a floor. It will cost $20 to carpet the floor. What will it cost to carpet a floor half as large? Represent the problem by means of the rectangle. What will it cost to carpet a floor twice as large? Represent the problem.

6. John's father has a rectangular field. Represent it. It will cost $5.00 to mow the field. Dick's father has a field twice as large. Represent the field. What will it cost to mow this field?

7. Make a square of a given size. Make a rectangle twice as large. Make another rectangle three times as large as the square. Four times, and so on. Make problems using the rectangles as illustrations.

8. Draw a line to represent the conditions of the problem.

Draw pictures to represent the conditions.

9. Use toy money. Attach it to the objects or figures to indicate the relative values.

10. Cut strips of carpet to cover the desk. Cut square inches to cover the surface of boxes.

Lay square inches to cover surfaces of given dimensions.

Mark out square yards on the floor or in the school yard.

11. Let the children make for themselves bundles of

splints (or wooden toothpicks), by which they can represent numbers made up of tens and units. Illustrate simple problems by means of these bundles.

12. Bring little articles to school, — toys, utensils, etc. State actual cost or value, and make problems involving buying or selling such articles.

13 Let the children relate their actual experience in building and making, buying or selling, and ask the class to compare.

EXERCISES IN MEASUREMENT

Exercises in measurement are very valuable. Every child should provide himself with a foot rule, yard-stick, and tape-measure, which he has made for himself. Measurements should be made and compared, and this work assigned as actual individual or class work. The measurements should be compared at the period of recitation. Accuracy and painstaking should be insisted upon. Later, measurement can be applied to the sewing, cooking, and wood-working, where such practice is indispensable.

The following examples are suggestive :

1. The skirt of Jeannette's next dress is to be trimmed with ribbon. How many yards of ribbon will be required for one row of trimming? Two rows? Three rows? How much will it cost at five cents a yard? Six cents? Ten cents?

2. Kate is making candy. The recipe calls for a cup of sugar, a half-cup of cream, and one-fourth pound chocolate. To make twice as much candy, how much sugar does she need? How much cream? How much chocolate?

3. Jack is making a checker-board. He divides the board into two-inch squares. How large must his board be?

As soon as this element of reality enters into the child's work, he will learn readily, will apply his new knowledge and

will retain what he has learned. He will remember only what he uses. He will use nothing which does not enter into his own experience. It is because the practice runs against the grain that it is necessary to spend so much time in primary drill. Teachers are urged to observe the plays which interest the children, their building, their making, their buying and selling, their trading. Out of these experiences abundant problems may be constructed, to be repeated in the school practice. ED.

XI.

SEAT WORK IN NUMBER FOR GRADES II. AND III.

MEASURING and CUTTING exercises should be given freely, especially during the first half of the year. They may be similar to those given in Grade I., except that more difficult measurement should be required. These exercises should emphasize the oral arithmetic lessons which are being given at the time.

TYPE EXAMPLES may be put on the blackboard by the teacher. The children change the figures in the example, otherwise retaining the form.

Ex. John sold 50 newspapers and Edwin sold 28. How many more papers were sold by John than by Edwin?

Pupil's Ex. John sold 42 newspapers and Edwin sold 23. How many more newspapers were sold by John than by Edwin?

This exercise may be varied by using the names of members of the class. Several examples may be required.

Through such practice, the children will become familiar with the method of solving any easy problem.

The tables of long measure, dry measure, and any other tables required in the course, can be fixed more firmly in the child's mind by frequent use in these examples.

After a few months' practice in these examples use

two problems involving two dissimilar operations. The pupils should make one example of each sort.

This work in problems should receive more attention than the more abstract number work.

The material mentioned below is useful:

1. Individual counting-frames. These are wires upon which fifty (50) beads are strung; they may be used in all combinations of numbers to fifty.

Each wire is about 18 inches long and $\frac{1}{6}$ inch diameter. Wire may be bought and cut at any store where wire is sold. Glass beads $\frac{3}{8}$ inch diameter, with holes large enough to admit wire.

The beads are strung two blue and one white alternately, every *tenth* bead a yellow one. The wires must be turned up in a loop at each end, to prevent beads from slipping off.

Wire and beads for fifty-six children cost $3.00.

2. Cards containing problems may be purchased at school supply firms. The questions may be copied and answers written, or work may be performed without copying questions.

3. Cut large-sized figures from old calendars. These may be placed in envelopes and distributed to the children when needed, or they may be mounted on stiff paper or cards and placed in boxes.

Unmounted they last a long time, and are valuable in helping children to a knowledge of counting from one to thirty, in arranging the calendar months and for assorting. They may be mounted so as to give all the numbers from one to one hundred, and in this way may be used for decade work and for multiplication and division.

XII.

MISCELLANEOUS EXERCISES WITH ABSTRACT NUMBERS

I.

Write equations and have the children supply the missing term, as

$9+?=11$	$?\times 8=48$	$49\div ?=7$	$?-6=9$
$?+8=16$	$4\times ?=24$	$9+8=?$	$15\div 5=?$
$18-?=11$	$?\div 7=5$	$7\times 8=?$	$16-7=?$

These may be written on cards $3\frac{1}{2}\times 4$ inches.

II.

Ten sets of cards $3\frac{1}{2}\times 4$ inches, every card different, may be used for drill on numbers from 10 to 100. Six sets include some of the forms of equations just mentioned, as,

(1)	(2)	(3)
$9+8=$	$9+?=17$	$?+9=15$
$8+7=$	$8+?=15$	$?+7=15$
$7+5=$	$7+?=15$	$?+5=15$

(4)	(5)	(6)
$17-8=$	$17-?=8$	$?-8=9$
$15-7=$	$15-?=7$	$?-7=8$
$12-5=$	$12-?=5$	$?-5=7$

(7)			(8)			(9)	(10)
÷2	÷3	÷4	÷7	÷9	÷12		
10	27	4	8	14	54	94 + 8	6 × 9
6	3	16	36	16	67	37 − 9	8 ÷ 4
8	36	24	75	29	109	63 + 9	7 × 8
12	30	48	86	56	47	74 − 6	144 ÷ 12
24	21	28	29	98	86	etc.	etc.
	etc.			etc.			

III.

Let children make lists of numbers. Begin with a certain number and add an equal number each time; set down results to about 100. Thus, begin with zero and add two each time; begin with two and add three each time.

0	2
2	5
4	8
6	11

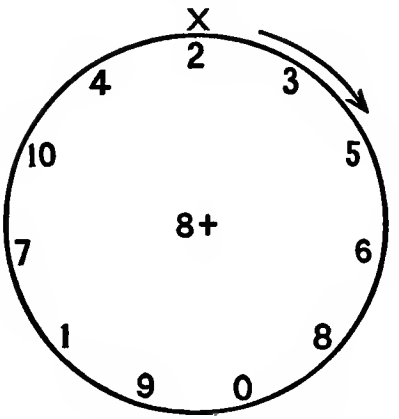
IV.

Write on the board a number, as 30, with a row of numbers under it, thus; — 2-9-6-4-5-1-4-3-7-8-. Children add 2, 9, etc., to 30, then subtract 2, 9, etc., from 30.

V.

The wheel is a helpful device for written drill in number. Place a row of numbers around the inside of the circle; in the centre, put a number and sign, as 8+. The children's work from the wheel, as it now looks, should be, —

$8 + 2 = 10$
$8 + 3 = 11$
$8 + 5 = 13$ etc.



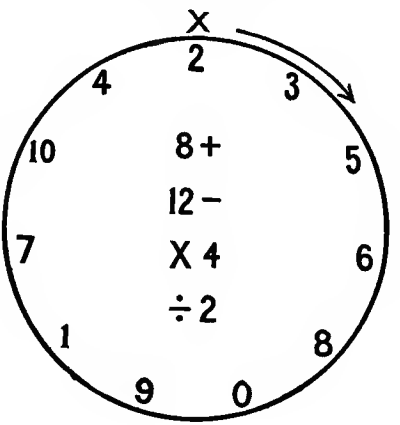
If the sign and number are reversed, thus, + 8, the work would be, —

$2 + 8$
$3 + 8$
$5 + 8$ etc.

The cross at the top shows the starting-point. The arrow shows which way to take the numbers. When the pupils are able to do more, other numbers to be added may be placed in the centre; then subtraction may be taken; place a number and sign, as 12 —; the work would then be,

$8 + 2 = 10$	$12 - 2 = 10$
$8 + 3 = 11$	$12 - 3 = 9$
$8 + 5 = 13$	$12 - 5 = 7$
$8 + 6 =$	$12 - 6 =$ etc.

Gradually multiplication and division may be added to the work. The wheels may be varied in many ways, and made attractive by using colored chalks.



VI.

A change from the wheel, yet practically the same thing, is a column of figures written on the board, embraced in a bracket, at whose point are figures, preceded by signs which tell what is required. This may include giving the first and second terms to find the third, or the first and third to find the second, or the second and third to find the first term. **Grades II. and III.**

6	
3	+ 7
9	− 2
5	× 3
4	÷ 2
2	
8	

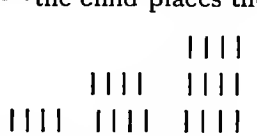
VII.

Prepare a chart like the following, for rapid drill in addition, subtraction, multiplication, and division.

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

VIII.

Supply each child with a quantity of pegs and an envelope containing numbers from one to fifty (these are written on cardboard or cut from calendars and pasted). When told to make a certain table, — for instance, the fours, — the child places the pegs thus, —



and as he completes each progression, finds the required number in the envelope and places it thus:

Grade II.

If the numbers are written on cards, some will be lost or soiled with constant use. The child himself may replace these by writing the required number on little squares of blank card, given to him for the purpose.

IX.

Peg boards for drill on the "tables." Have a square board, half an inch thick, with twelve rows of holes, twelve holes in a row, the holes one inch apart; holes large enough to admit the pointed end of a peg. Any table may be made, by placing the required number of pegs in each row down the twelve rows. Grade II.

X.

Make charts covering all multiplications and divisions.

Arranged thus:		Written by children thus:
4		$4 \times 6 = 24$
4		$6 \times 4 = 24$
4	6	$24 \div 4 = 6$
4	6	$24 \div 6 = 4$
4	6	
4	6	
24	24	

Grade II.

These charts should be made from large sheets of gray manila paper, marked with a rubber pen, and provided with some arrangement for hanging.

Seat work from the charts should follow concrete work, and be used only after children do good oral work from same charts. The work is easily looked over, affords constant repetition, and forms a basis for quick drill.

DRAWING AND WRITING

XIII.

EXERCISES TO ACCOMPANY LESSONS IN DRAWING

1. Make circles, squares, and oblongs of tough brown paper.

(*a*) Let the children outline them, placing them in rows.

(*b*) Let the children outline them and draw the diameters.

(*c*) Let the children outline them and draw the diameters and diagonals.

(*d*) Let the children outline them and combine them in designs. (This suggestion should be followed for busy work only after several lessons in designing have been given to the class, as suggested in the regular course in drawing. Otherwise the children make haphazard arrangements with no real thought of design underlying them; and this, while it may serve to keep them busy, cannot fail to affect harmfully the work in design.)

2. Objects such as kites, leaves, stars, may be cut out of tagstock. Let the children outline them.

3. Simple, straight, and curved line figures, such as squares, circles, fans, flags, and ladders, may be drawn by the teacher on both sides of blank cards (a different figure on each side). Give each child a card, with

paper on which to draw as many of the figures as the space will allow. Encourage orderly arrangements of drawings in rows vertical and horizontal. Try to prevent haphazard arrangements and crowded papers.

4. The teacher may outline figures of animals upon cards. Give each child a card and a sheet of tissue paper and let him trace them, or give him drawing paper and let him draw them.

5. In October let each child bring a pretty leaf to school and trace around it, then put in the veins, and later draw it freehand.

6. Let the children trace around leaves, color them, and then cut them out. In using colored crayons encourage the children to make the strokes in one general direction, rather than rubbing round and round.

7. Cut from old books and papers outline pictures of flowers, dogs, cats, rabbits, etc. Give each child a sheet of tissue paper and a picture and let him outline it. After a time he can reproduce it freehand.

8. Let the children draw the specimens used in nature study, as seeds, leaves, fruits, twigs, and flowers. Pressed leaves and flowers may be utilized here.

9. Let the children illustrate the subjects talked of in the general lessons, either with pegs or pencil. For example, in November the teacher may outline upon the board pictures of the Mayflower, Plymouth Rock, a wigwam, or a log house, and the children will be delighted to reproduce them upon their desks with pegs. Then they may be erased from the board and the children directed to draw them upon paper, with such additions of their own as their imaginations dictate. The general subjects for each month may be treated in a similar manner.

10. Let them illustrate a poem or a story. (See pp. 127–132.)

11. The children may trace the geometric figures, and by the addition of a few lines change the figures into some familiar object.

12. The teacher may put upon the board a design of geometric figures, — as a border composed of a repetition of squares or of alternating squares and circles. Give the children corresponding tablets to outline and let them copy the design.

13. Give them the tablets and let them originate designs for borders.

Note: This should not be attempted until after instruction in the same line has been given in the drawing lessons. The simple principles of order and strength being understood, the children will not be tempted to create such weak designs as they otherwise will.

14. Put upon the board designs other than borders, composed of geometric figures, and allow the children to reproduce with tablets.

15. Let them originate similar designs. (See No. 13.)

16. Put upon the board designs composed of straight lines. Let the children reproduce them upon paper, with the aid of Prang's one, two, and three inch sticks to secure right proportions. Good suggestions for these borders may be obtained from "Elementary Needlework," by K. M. Foster, published by Prang Educational Company.

17. Let them originate borders in like manner. (See note under No. 13.)

18. Give each child a pair of scissors and a sheet of paper. Let him cut, freehand, leaves, flowers, and

objects which he may see. He may draw in lines or color afterwards. This is most excellent work at any time. One or two lessons in handling scissors and holding paper properly should first be given.

19. Give each child a sheet of plain paper and a tablet of any shape. The children may cover the paper with outlines of the tablet, and then draw in each some object, as a butterfly, violet, buttercup, etc. The children enjoy this very much if the teacher selects the best sheets to be colored at some later time. Orderly arrangement should be insisted upon.

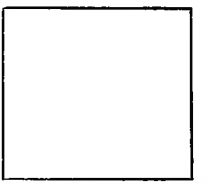
20. Give each child a sheet of tissue paper and one of ruled paper. Let him trace the ruled lines on the tissue paper, then bisect the spaces by lines parallel to those traced. Afterwards cut the paper on the lines drawn. Purpose: Practice in drawing vertical and horizontal lines. Do not place dots and draw from one dot to another, but draw the line freely.

21. Give each child a sheet of tissue paper and one of ruled paper. Let him trace the ruled lines and fill every other space with a border design, as a row of apples, of leaves, or flowers, or with symbolic designs, as three lines diverging from a point to represent a plant, horizontally elongated diamonds to represent pollywogs, oblique lines composed of dashes for driving rain, triangles for tents, etc. Purpose: Practice in border designs.

22. Placing points and drawing from one to another is extremely cramping in its effect, and does not develop the idea of the *direction* of *line* which is one of the first things that it seems wise to foster.

"Practice in drawing straight lines" should develop this feeling and judgment of direction of line and the

manual ability of *keeping the line going* in the right direction without the mechanical contrivance of a dot at the end. A child should be taught to draw a square by placing light, soft little lines thus to show the mass or proportion of the square, — the height and width, — then to examine or test these, and correct by moving one line, then to sketch the sides of the square through these indicated lines, with no thought of the *corners*, fixing the attention wholly upon the proportion of the *whole*.



23. Give each child a one-inch stick, a pencil, and sheet of drawing paper. Ask the children to place the stick *on the desk near* the top edge of the paper. Direct them to notice its length, to call it "one inch long," to place a point by *guess*, on the top edge of the paper, one inch from the corner; then to take the stick, measure this distance, and correct, if necessary. Then sketch a vertical line to the lower edge of the paper, parallel to the left edge. Place another point at the top edge, by guess; test, correct, sketch second line parallel to the first, and proceed in the same way until paper is filled. This may be carried out similarly by placing points on left edge of paper and sketching horizontal lines. *No point* should be placed at the end of the line toward which the child is drawing. The direction of the line, not the end of it, is the important idea.

Object: learning to estimate one inch, and to sketch parallel lines.

24. Give each child a circular tablet one inch in diameter. Direct the children to outline the tablets, then to measure one-half inch to the right and left of

this circle by using the one-inch sticks. Through these points which they have found they may draw another circle about the first one. Then measuring as before, they may draw a third circle, and so on until a given number of concentric circles has been drawn. Purpose: Practice in drawing circles. (Use only after careful teaching.)

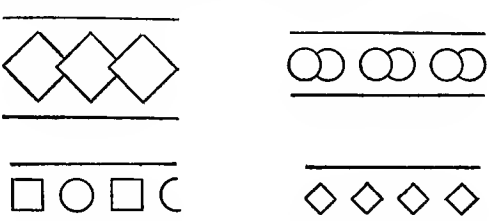
25. Let the children draw designs and borders and color them with pencils or crayons which may be bought for one cent or five cents apiece. They may also draw and color leaves and flowers from nature. Useful all through the year.

A great variety of borders, rosettes, etc., may be planned. Pegs may be used for many of these borders and designs. At times the children make designs without a copy.

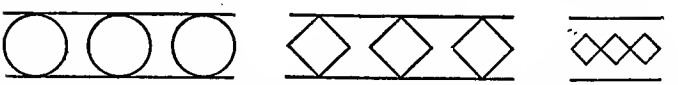
This suggestion is valuable, but should be used only after several lessons in designing borders have been given to the children and the principle of strength in arrangement has been explained.

Border lines made of the Prang sticks or of shoe pegs add much to the value of the designs.

Tablets placed overlapping, or at a sufficient distance from each other to give the feeling of their ability to stand alone, will have the necessary element of strength,



whereas tablets just touching each other or just touching margin lines seem weak.



This principle is easily understood by the children and should govern all work in designing or arranging.

For more advanced work the children may arrange tablets in original designs on their desks and then draw them on paper, freehand, watching carefully the size and proportions of the tablets and the spaces between.

26. The teacher may collect, or she may encourage the children to collect, little pictures of objects based on the type forms. These may be cut from advertising pages of magazines, etc. The pictures may be placed in envelopes and given to the children to arrange in groups according to the particular basic type.

27. Children may arrange and paste the colors of the spectrum. At first the six colors, red, orange, yellow, green, blue, violet, are used; later some of the intervening colors are added.

Milton Bradley's colored squares divided into sixteen oblongs are used. These give a narrow oblong, but waste little paper, while the children are working out the arrangement of colors as seen in the spectrum. Later, larger oblongs may be used, by dividing the square into eight oblongs.

28. Collections of scraps of pretty colored materials may be made, placed in envelopes, and the children allowed to sort according to the six primary spectrum colors.

29. Make a collection of pasteboard units for designs. These may be several geometric outlines, or units of historic ornament. There should be a large number of duplicates. Let the children arrange these units in effective designs and copy and color the designs.

30. Allow each pupil to make an individual sketch-book in which he is free to draw whatever he may choose after other lessons are ended. As a reward for diligent and faithful work, individual pupils may be allowed to sketch out of doors; or groups of children may be sent to sketch selected objects. Such exercises are particularly necessary in schools where large number of classes make frequent recitations impossible, and where variety must be provided through the busy work.

XIV.

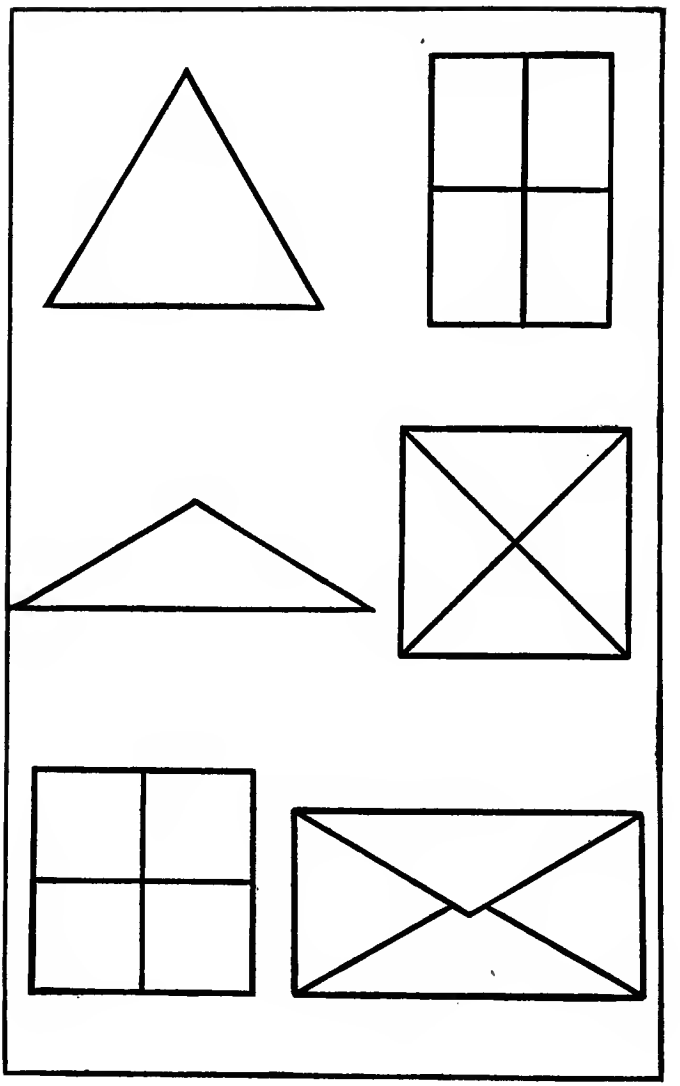
A SERIES OF CHARTS FOR BUSY WORK IN DRAWING

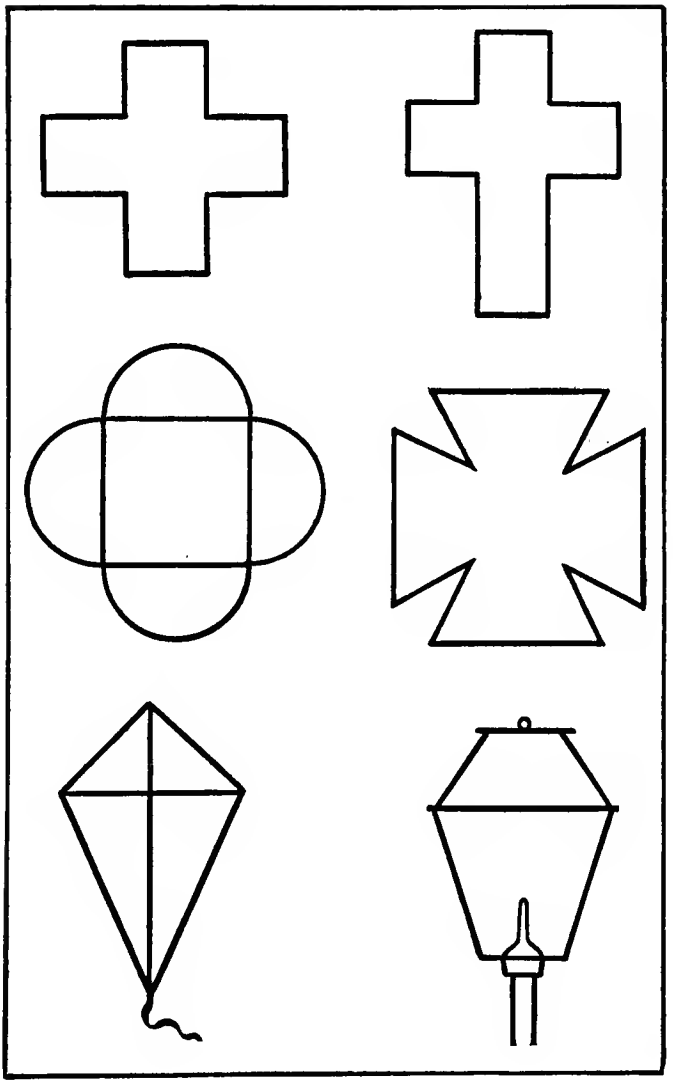
THE eight following pages represent a chart which the teacher may copy in large size upon heavy manila paper, the sheets to be fastened together and hung upon the wall. The different forms may be copied by the children *with pegs or sticks*, upon the desk or a sheet of cardboard.

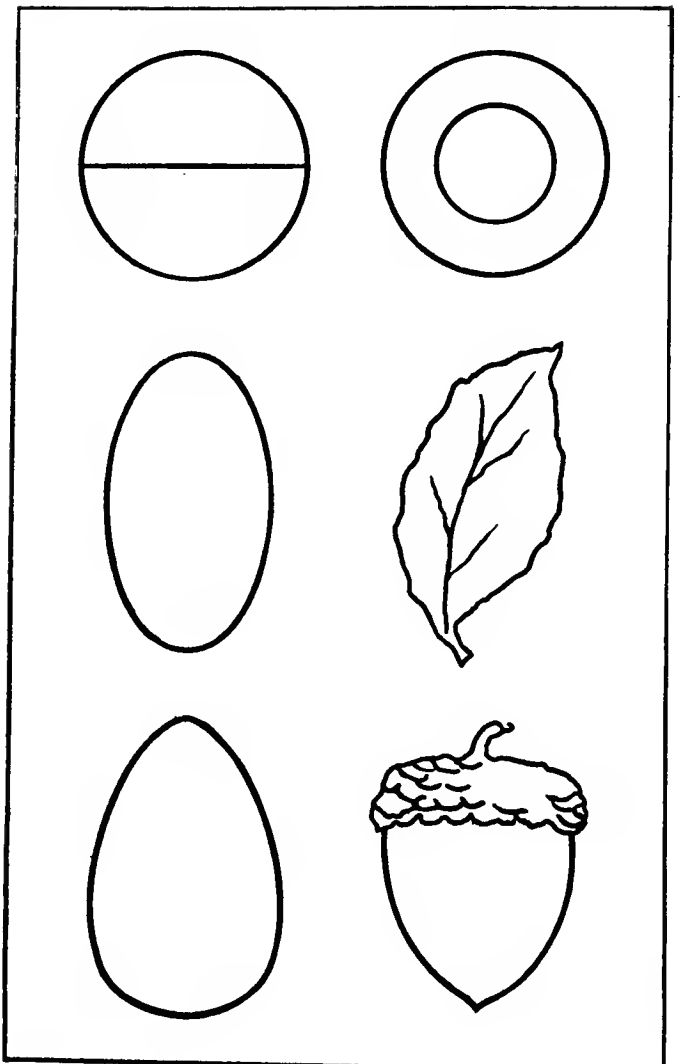
Similar pages may be added at the teacher's pleasure.

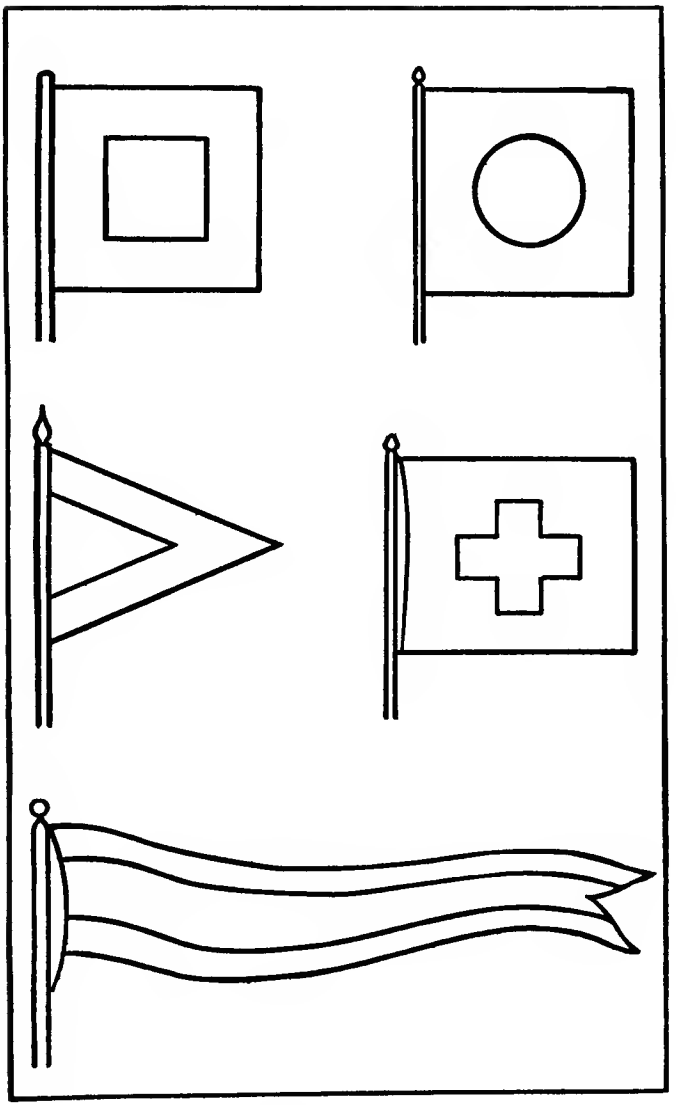
A rubber pen or a wide drawing pen made for such purposes should be used in making the chart.

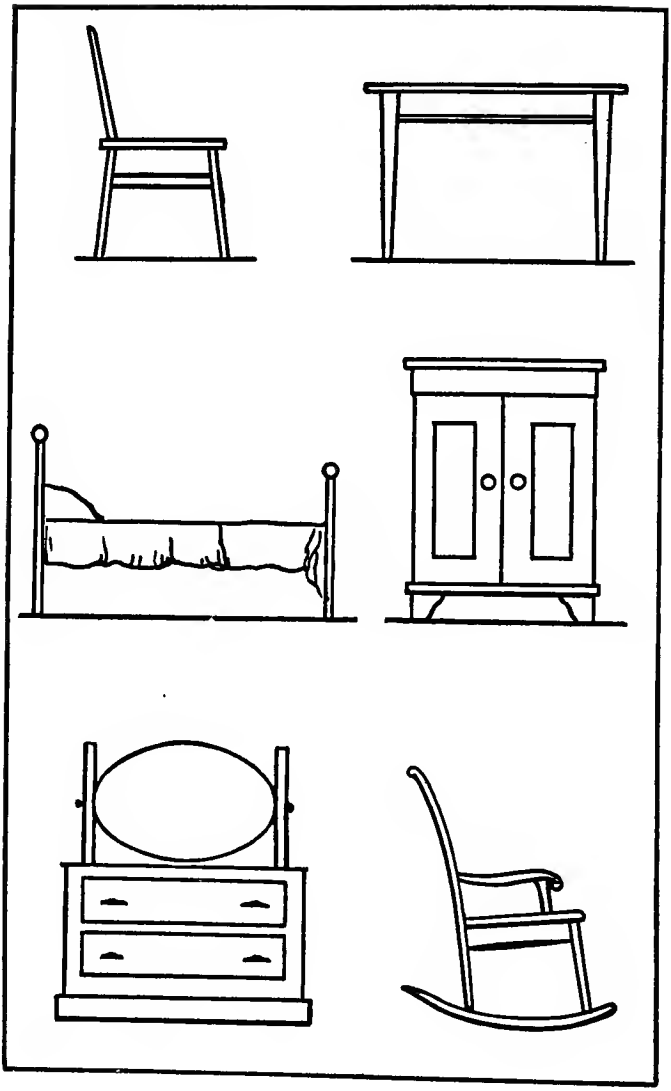
(The drawings for the chart were prepared by Miss Kate F. Pierce, Assistant Director of Drawing, Boston, whose courtesy and kindness are gratefully acknowledged.) ED.

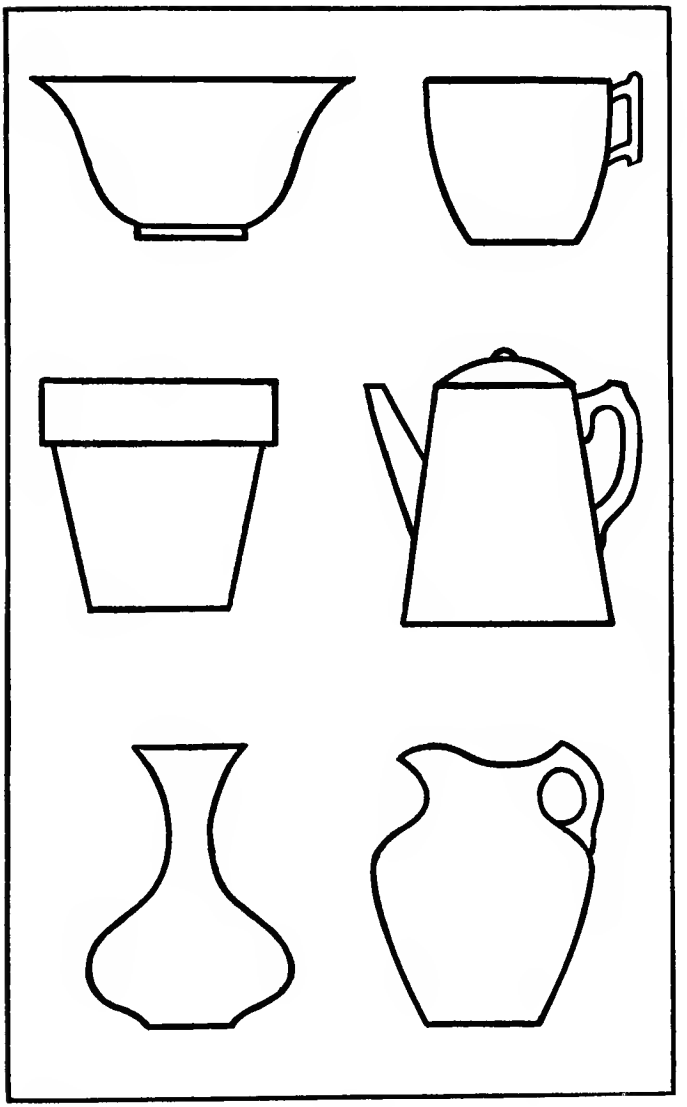


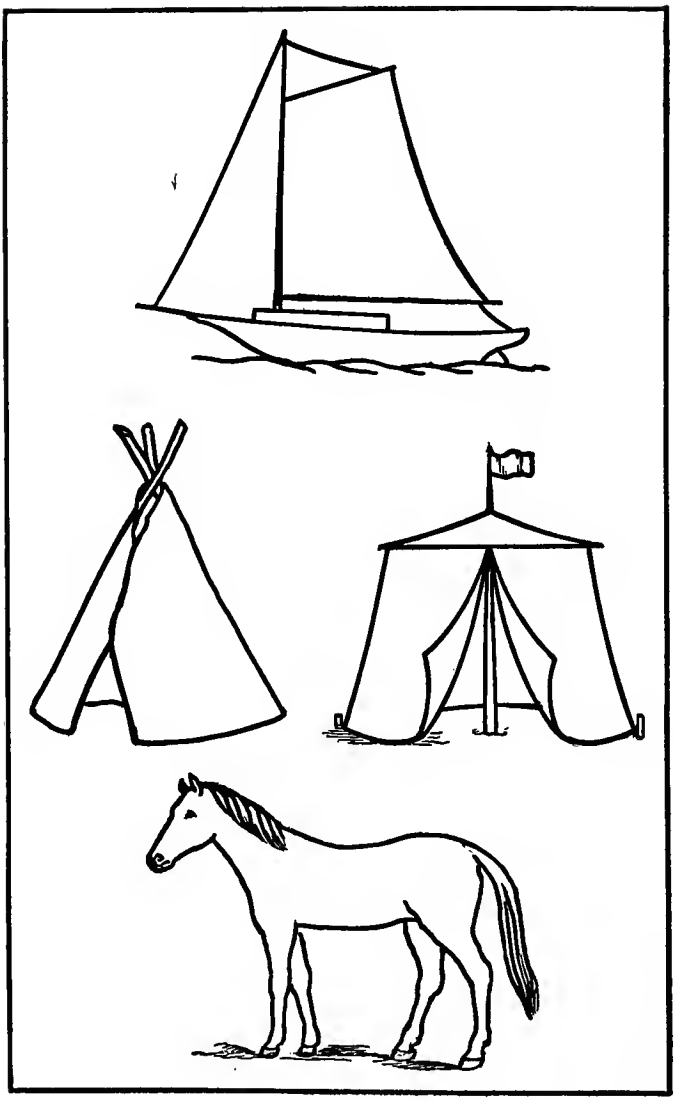


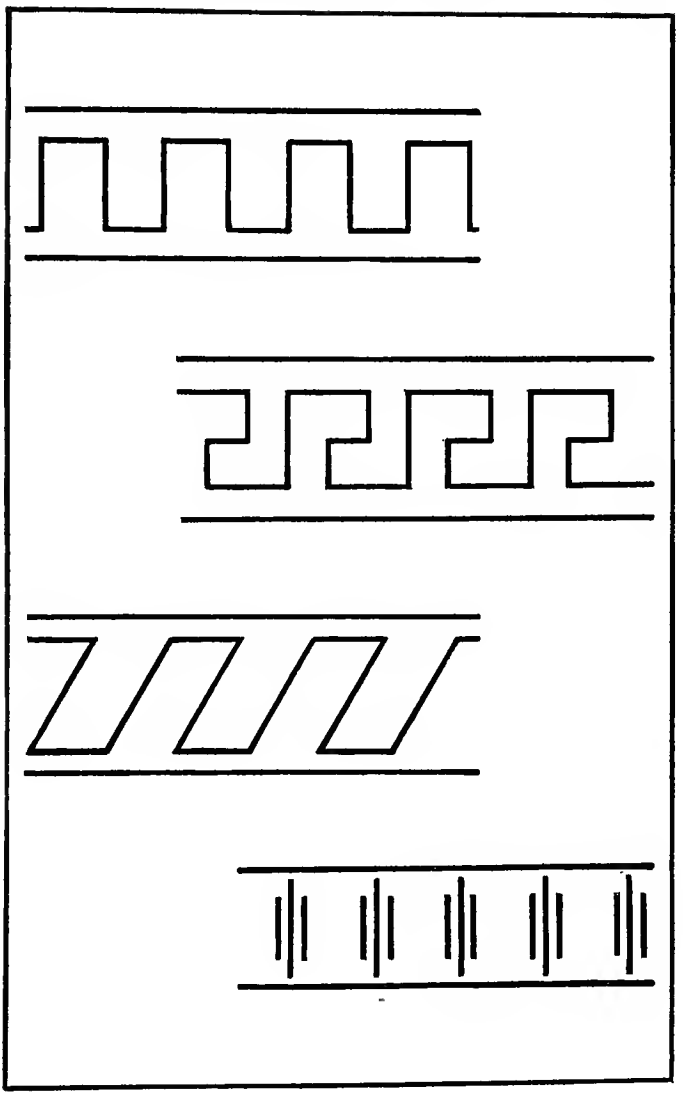












XV.

CHILDREN'S DRAWINGS

THE use of imaginative and illustrative drawing is most beneficial to the child, because it gives the constant practice of pencil handling that is absolutely necessary. It also keeps the child in the habit of trying to express his ideas for himself. Both the ideas and the drawings are necessarily crude at first, but gradually grow more and more complete through the very trying.

Older children, whose early efforts in this direction were not encouraged, are very unwilling, and indeed unable, to put their ideas, unaided, upon paper. They should not be allowed to grow self-conscious, nor to feel that their crude attempts are of no value or will be ridiculed.

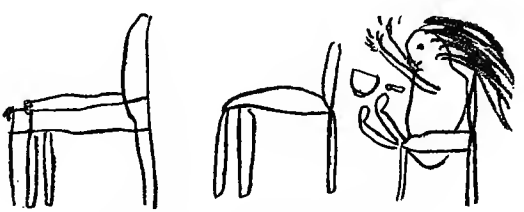
The skilful teacher will use these drawings as records by which to judge the progress of the child's mind, — how much he has grasped of what she has just been telling him, how much he observed in his walks, how much of a nature-lesson he really absorbed, how much of a story he understood.

This work is especially valuable in connection with lessons on animals. It should never be considered as a *result*, but as a means to an end, — the end that every good teacher keeps always in view, the growth of the individual child.

KATE F. PIERCE.

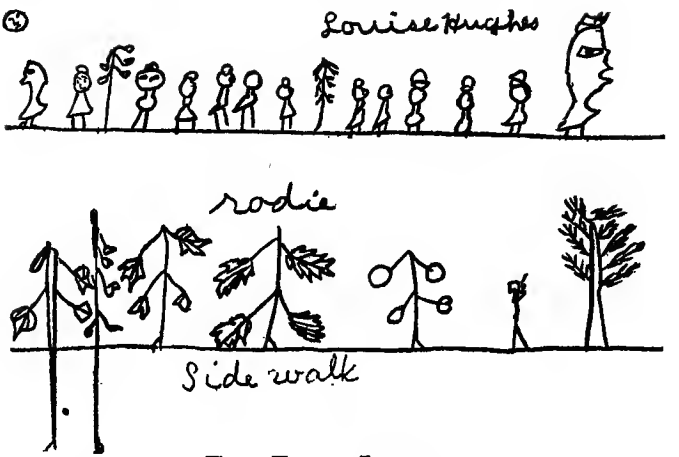
HIAWATHA

"Of all beasts he learned the language." Artist seven years of age. He depicts the reindeer, squirrel, rabbit, and beaver. The latter, being less familiar, is drawn most poorly. The Indian has a real Indian face. Perspective is good. Arrangement is good, indicating a clear mental picture of the whole scene.



STORY OF "THREE BEARS"

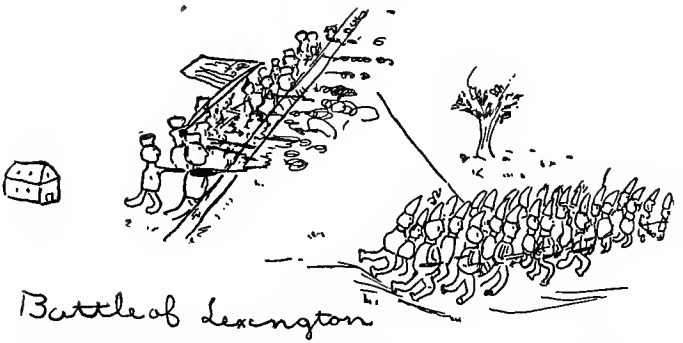
The child's idea of relative size is good and well expressed. So also is the action in the figure. Minor details, buttons, etc., omitted, and thought evidently concentrated on main points.



THE FIELD LESSON

This child remembers the various trees noticed while walking and tries to depict them, distinguishing them by their leaves. Those given are the most important in her estimation. She attempts to show road and sidewalk, and succeeds, too. Arrangement and observation excellent.

This picture was drawn to illustrate spelling lesson, the subject being "A Frosty Day." Words given were water, rain, drops, ice, slippery, snow, etc. Note action in two figures at right; also flagging.



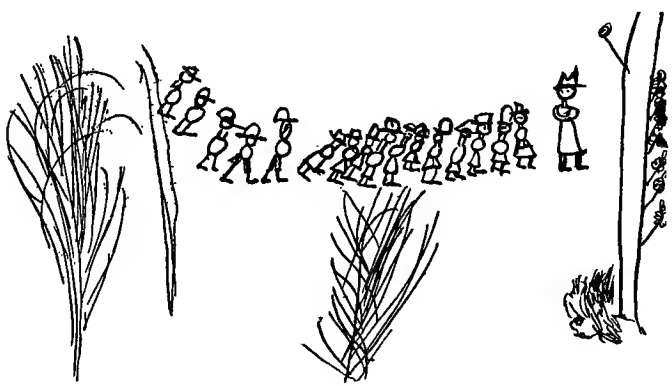
Drawing remarkable on account of the suggestion of great numbers of men, arranged one behind the other and only parts of each being shown. Artist distinguishes very well also between the farmers and the regulars. This drawing shows undoubted influence of some picture seen and studied.

WASHINGTON FIGHTING THE FRENCH AND INDIANS

As explained by child, the first man is Washington, the next McKinley; the third one is uncertain. Snow on ground, consequently horses' feet all "balled up." The army is over at left (with expressive gesture over desk at left of paper), — "Don't you see them over here hiding behind the trees?" Note "arsenals" of warriors, shape of caps, etc., also absence of ideas regarding historical sequence.

BOYS SKATING

Unusually good action. Notice calm indifference of *big* boys not playing hockey. No idea of perspective, but remarkably good observation of figures in motion.

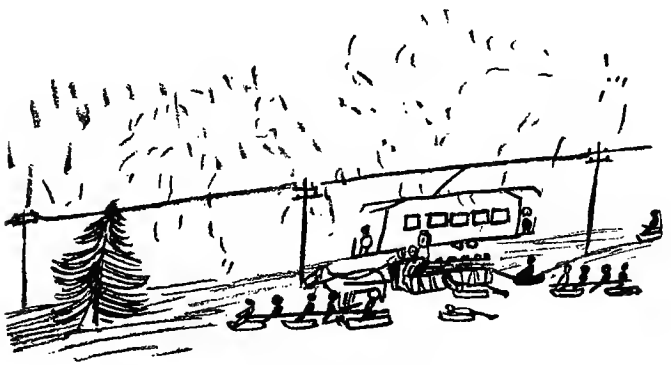


THE FIELD LESSON

Artist seven years of age. Notice action and arrangement. It is true, as he has shown, that those children at the end are apt to straggle behind. No observation of trees.

HIAWATHA

"Once a warrior . . . seized his grandmother and threw her," etc. Artist ten years of age. Notice the action. The grandmother seems to go. Child needs a few hints as to relative size of head and body, etc.



SNOW SCENE

Note unusual arrangement. Child has expressed the fact of one object in front of and consequently partially covering another object. This is very unusual. Shows a very clear mental concept of the whole scene.

PAUL REVERE'S RIDE

The child's thought of Paul was Poll (parrot). Note beak, shape of body, etc. Poor arrangement, lack of unity and clearness in idea and grasp of the whole thing, as well as mistaken concept of the hero.

LIST OF STORIES OR INCIDENTS AND SCENES TO BE ILLUSTRATED BY DRAWING

Many of Æsop's Fables.
Hiawatha's childhood.
Hiawatha's building of canoe.
Hiawatha's sailing.
Hiawatha's fishing.
Hiawatha's learning language of bird and beast.
Hiawatha's shooting of the deer.
Hiawatha and the pearl feather.

Red-Riding-Hood.
Cinderella.
Goldenhair and the Three Bears.
Rhymes from Mother Goose.
The first Thanksgiving
Santa Claus and Reindeer.
Christmas tree.
Stockings hung by chimney.
Jack Frost.
Paul Revere's Ride.
George Washington at the elm.
George Washington and the hatchet.
Admiral Dewey at Manila.
A rainy day.
A windy day.
A summer day.
A winter day.
Children going to school.
Gathering apples.
Gathering chestnuts.
The snow man.
Jack and Mary run a race.
Our schoolhouse.
Peggy's Christmas tree.
The Ugly Duckling.
The Leak in the Dike.
Pied Piper.
Any walk or picnic in which the children all take part.

XVI

FOR PRACTICE IN WRITING

MOTTOES, PROVERBS, AND QUOTATIONS TO BE COPIED BY THE CHILDREN

A MERRY heart goes all the day.

All great works are made up of little works well done.

Come, work together with hearty good will.

Do noble things, not *dream* them.

He who loves to know must love to learn.

I 'll do the best that I can.

Learn to labor and to wait.

Not how much, but how well.

There 's nothing so kingly as kindness,

And nothing so royal as truth.

There is always something going on out of doors worth looking at.

To thine own self be true.

Think much, speak little.

The good deed lives through all ages.

What ought to be done, can be done.

Work teaches us to be faithful.

Constant occupation prevents temptation.

Obedience is more seen in little things than in great.

Obedience is the mother of happiness.

Mistakes occur through haste, never through doing a thing leisurely.

Method will teach you to win time.

Set about whatever you intend to do; the beginning is half the battle.

Time is precious, but truth is more precious than time.

Lost time is never found again, and what we call time enough always proves little enough.

He who gains time, gains everything.

A little too late, much too late.

The worth of a thing is best known by the want of it.

The workman is known by his work.

Never was good work done without much trouble.

The result tests the work.

Good material is half the work.

A work ill done must be twice done.

A work well begun is half done.

The time is never lost that is devoted to work.

By the work we know the workman.

Do the head work before the hand work.

Scatter with one hand, gather with two.

Promise little and do much.

Patience is the key of Paradise.

At the bottom of patience is Heaven.

How poor are they who have not patience.

Patience is the door of joy.

Patience opens all doors.

He who is not ready to-day will be less so to-morrow.

When you have set yourself a task, finish it.

From small beginnings come great things.

Deserve success, and you shall command it.

A child has two ears and one mouth, that he may hear much and speak little.

Unfading are the gardens of kindness.

Good to begin well, better to end well.

Cross words are like ugly weeds.

Make haste slowly.

Never is a long day.

No one is always right.

Tell me with whom you go, and I will tell you what you are.

When there is no good within, no good comes out.

Not how long you live, but how well.

You can do more good by being good than in any other way.

Our thoughts are heard in Heaven.

The wise man is not he who never makes a mistake; but he who never makes the same mistake twice.

JEFFERSON'S TEN RULES.

1. Never put off until to-morrow what you can do to-day.
2. Never spend your money before you have it.
3. Never trouble another for what you can do yourself.
4. Pride costs more than hunger, thirst, and gold.
5. We seldom repent of having eaten too little.
6. Nothing is troublesome that we do willingly.
7. How much pain the evils have cost us that have never happened.
8. Take things always by the smooth handle.
9. When angry, count ten before you speak, if very angry, count a hundred.
10. Never buy what you don't want because it is cheap.

POOR RICHARD'S SAYINGS.

1. Many a little makes a mickle.
2. Three removes are as bad as a fire.
3. A word to the wise is enough.
4. God helps them that help themselves.
5. The used key is always bright.
6. If you would have your business done, go; if not, send.
7. A small leak will sink a great ship.
8. Fools make feasts, and wise men eat them.
9. It is hard for an empty bag to stand upright.
10. Rather go to bed supperless than rise in debt.
11. The sleeping fox catches no poultry.
12. Sloth makes all things difficult, but industry all easy.
13. Plough deep while sluggards sleep.
14. Never leave that till to-morrow which you can do to-day.
15. Handle your tools without mittens; the cat in gloves catches no mice.
16. Little strokes fell great oaks.
17. Vessels large may venture more,
    But little boats should keep near shore.
18. Get what you can, and what you get hold;
    'T is the stone that will turn your lead into gold.
19. Remember that time is money.
20. He that riseth late must trot all day.
21. There are no gains without pains.
22. One to-day is worth two to-morrows.
23. Be ashamed to catch yourself idle.

24. Leisure is time for doing something useful.

25. If you would have a faithful servant, serve yourself.

26. A stitch in time saves nine.

PROVERBS.

1. Train up a child in the way he should go, and when he is old, he will not depart from it.

2. Labor not to be rich.

3. A word fitly spoken is like apples of gold in pictures of silver.

4. Let another man praise thee, and not thine own mouth; a stranger, and not thine own lips.

5. Go to the ant, thou sluggard; consider her ways, and be wise.

6. Hear instruction, and be wise, and refuse it not.

7. A wise son maketh a glad father; but a foolish son is the heaviness of his mother.

8. Lying lips are abomination to the Lord: but they that deal truly are his delight.

9. A soft answer turneth away wrath; but grievous words stir up anger.

10. A merry heart maketh a cheerful countenance.

11. Pride goeth before destruction, and a haughty spirit before a fall.

12. He that is slow to anger is better than the mighty; and he that ruleth his spirit, than he that taketh a city.

13. A merry heart doeth good like a medicine.

14. Even a child is known by his doings, whether his work be pure, and whether it be right.

15. Love not sleep, lest thou come to poverty.

16. A good name is rather to be chosen than great riches; and loving favor rather than silver and gold.

17. My son, if sinners entice thee, consent thou not.

18. Be not wise in thine own eyes.

19. Happy is the man that findeth wisdom, her ways are ways of pleasantness, and all her paths are peace.

20. Enter not into the path of the wicked, and go not in the way of evil men.

21. Get wisdom; and with all thy getting, get understanding.

22. Turn not to the right hand nor to the left; remove thy foot from evil.

23. There be four things which are little upon the earth, but they are exceeding wise:

The ants are a people not strong, yet they prepare their meat in the summer.

The conies are but a feeble folk, yet make they their houses in the rocks.

The locusts have no king, yet go they forth all of them by bands.

The spider taketh hold with her hands, and is in king's palaces.